K·I·T·E™

Local Caching Servers (LCS):

User Manual

KU AGILE TECHNOLOGY SOLUTIONS

The University of Kansas

Table of Contents

Local Caching Servers 1
- Supported Browsers 1
- Getting Help 1
- System Requirements 2
  - Macintosh 2
  - Windows 2
  - Linux 2
- Downloading the LCS Software 3
- Setting up a Macintosh LCS 4
  - Activating the Server 4
  - Finding Your IP address 6
  - Setting Up the Port 7
  - Allowing Access through Your OS X Firewall 9
- Setting up a Windows LCS 16
  - Activating the Server 16
  - Finding Your IP Address 18
  - Setting Up the Port 20
  - Allowing Access Through Your Windows Firewall 21
- Setting Up a Linux LCS 28
  - Installing the LCS 28
  - Activating the Server 29
  - Finding Your IP Address 29
  - Changing the Port (Optional) 30
  - Allowing Access through Your Firewall 31
- Testing the LCS Web Address 32
- Checking Access Settings 33
- Configuring the KITE Client 34
  - Setting Up a Macintosh KITE Client 34
  - Setting Up a Windows KITE Client 36
- Using the LCS Admin Page 39
- Shutting Down the LCS 40
  - Shutting Down a Macintosh LCS 40
  - Shutting Down a Windows LCS 41
  - Shutting Down a Linux LCS 42
- Sending Log Files to the Help Desk 43
- Viewing System Properties 44
  - Viewing Macintosh System Properties 44
  - Viewing Windows System Properties 46

Local Caching Servers

A Local Caching Server (LCS) allows your computer to act as a dedicated network server, in this case for the Kansas Interactive Testing Engine® (KITE™) testing, which gives students and staff local access to KITE content. By using temporary storage, or a cache, the server is able to access data more quickly while reducing demand on the KITE servers.

You can set up an LCS on a machine running one of three operating systems: Macintosh, Windows, or Linux.

Supported Browsers

We support several versions of browsers, as follows:

Firefox 23.0 and 22.0 – supported and recommended
Firefox 10.0.5 – supported
Internet Explorer 8 – supported
Safari 6.0.5 – supported

Getting Help

If you need additional help, call or email the help desk:

Phone:	**785-864-3537**
Email:	**kite-support@ku.edu**

System Requirements

A caching server can be installed on a machine running Macintosh OS X, Windows, or Linux. Your machine must meet or exceed the requirements in the tables below.

Note: The specifications in the tables are the minimums that must be available for the LCS to use. These are NOT overall machine specifications.

Macintosh

Mac OS	Processor	RAM	Disk Space
10.6.X, 10.7.X, 10.8.X	1 GHz	2 GB	3 GB

Windows

Windows OS	Processor	RAM	Disk Space
Vista, XP, 7, and 8	2 GHz	4 GB	3 GB

Linux

Linux OS	Processor	RAM	Disk Space
CentOS, Redhat, Fedora, or Ubuntu	1 GHz	2 GB	4 GB

Downloading the LCS Software

After verifying that your computer can run the LCS software, you need to download the file before installing the server. Make a note of where you save the LCS software so that you can find it when you perform the installation steps in this manual.

Note: In this manual, the screen shots show the KITE-LCS folder installed in the recommended area for the particular operating system.

Download	Information
Website	http://ksassessments.org/LCS

Choose the correct version for the machine on which you will install the LCS.

Setting up a Macintosh LCS

Note: The instructions for setting up an LCS are platform-specific. Be sure you are using the instructions for the operating system that matches the machine you are using.

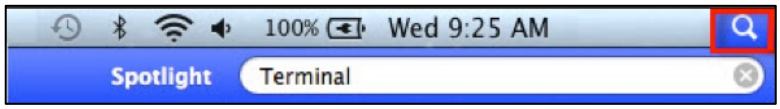
After you download the LCS file, begin setting up your LCS by performing the following tasks:

Activate the server,
Use or find your IP address,
Set up the port, and
Allow access through your firewall.

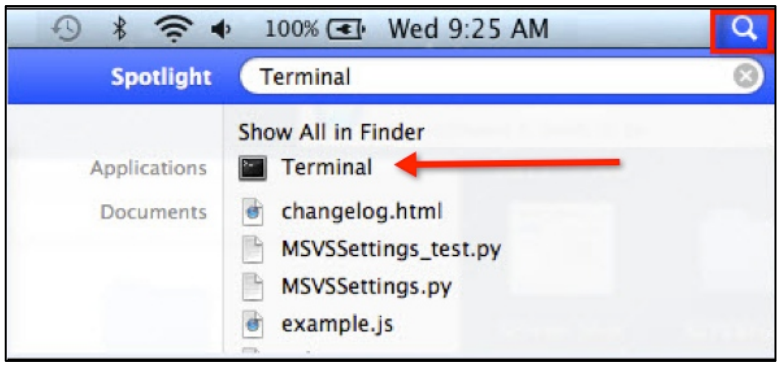
Activating the Server

To activate the server, perform the following steps.

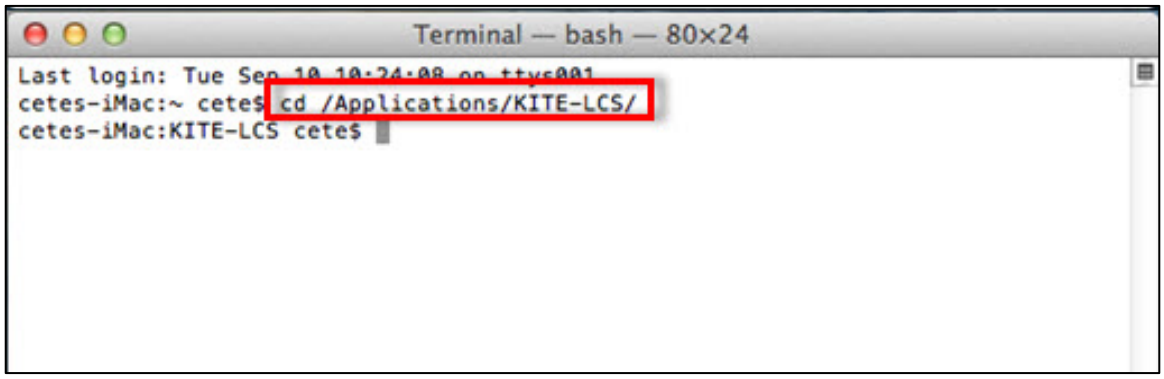
1. On the upper right of your screen, click the magnifying glass to open Spotlight.



2. In the Spotlight field, type Terminal.
3. Press Enter.
4. Click Terminal to open the application.

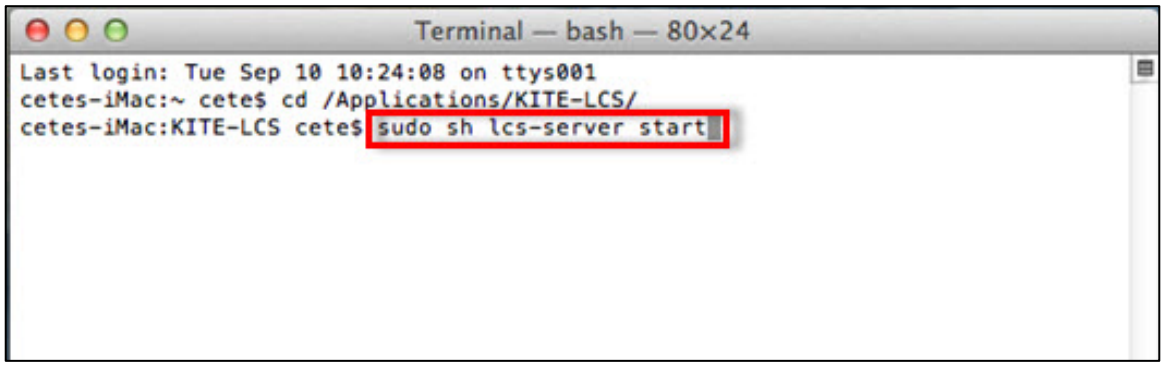


5. In the Terminal window, type cd /Applications/KITE-LCS/


Terminal — bash — 80×24
Last login: Tue Sep 10 10:24:08 on ttys001
cetes-iMac:~ cete$ cd /Applications/KITE-LCS/
cetes-iMac:KITE-LCS cete$

Note: If you did not save the KITE LCS software into the Applications folder, type the path for the location where you saved it.

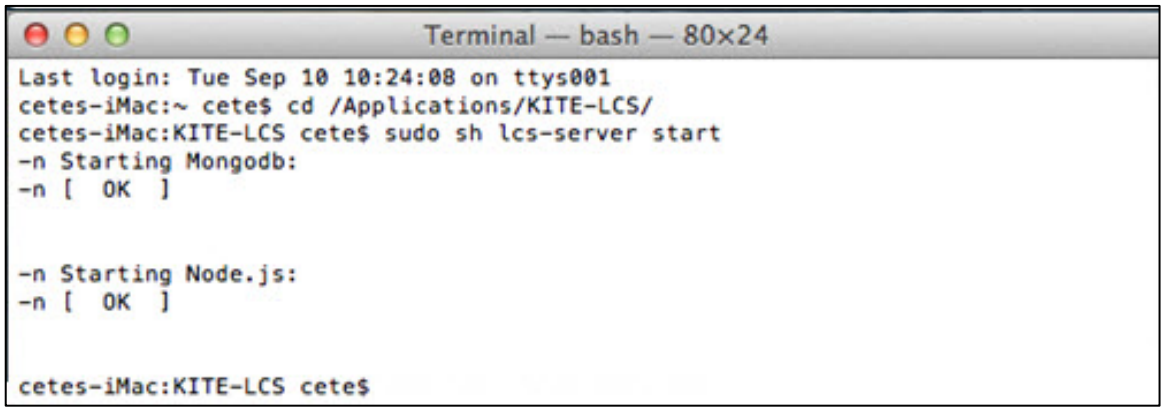
6. Press Enter.
7. When you are in the correct folder, type sudo sh lcs-server start


Terminal — bash — 80×24
Last login: Tue Sep 10 10:24:08 on ttys001
cetes-iMac:~ cete$ cd /Applications/KITE-LCS/
cetes-iMac:KITE-LCS cete$ sudo sh lcs-server start

8. Press Enter.

Note: The Terminal may ask for an administrator's password to start or stop the server. If it does, type the password and press Enter.

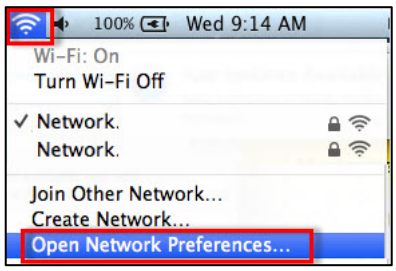
9. If the Terminal shows the following message, the LCS is successfully running.


Terminal — bash — 80×24
Last login: Tue Sep 10 10:24:08 on ttys001
cetes-iMac:~ cete$ cd /Applications/KITE-LCS/
cetes-iMac:KITE-LCS cete$ sudo sh lcs-server start
-n Starting Mongodb:
-n [OK]
-n Starting Node.js:
-n [OK]
cetes-iMac:KITE-LCS cete$

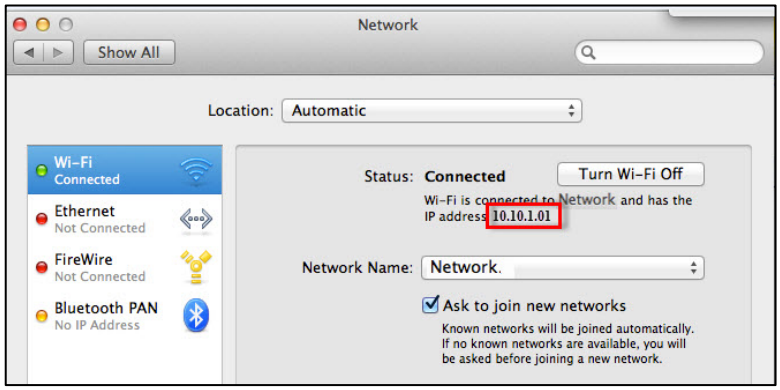
Finding Your IP address

If you know your computer's IP address, skip to the Testing the LCS Web Address section. If you do not know your computer's IP address, perform the following steps.

1. In the upper right corner of your screen, click the Wireless logo.
2. Click Open Network Preferences.



3. Under the Status field, find the IP address.

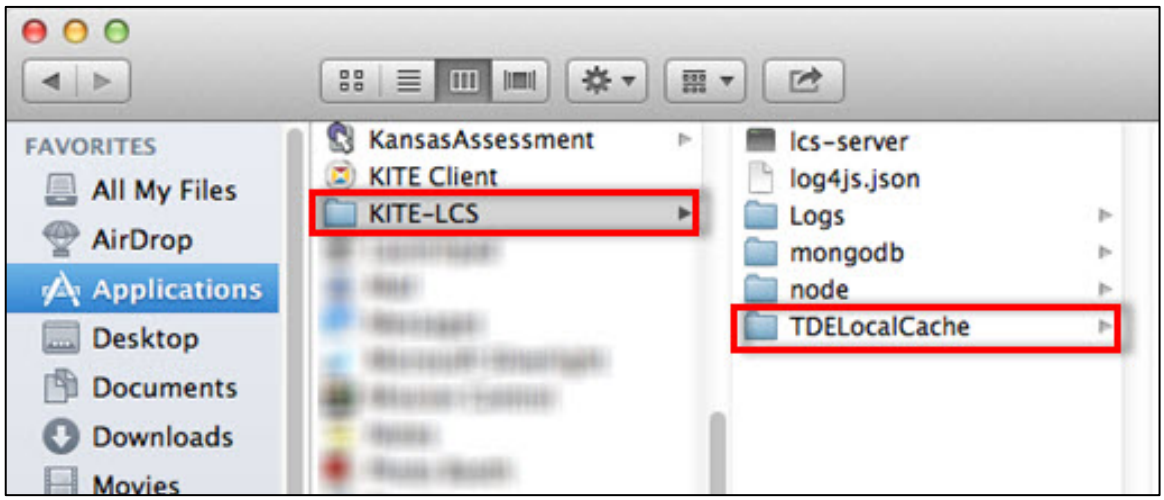

Network
Show All
Location: Automatic
Wi-Fi Connected
Ethernet Not Connected
FireWire Not Connected
Bluetooth PAN No IP Address
Status: Connected
Turn Wi-Fi Off
Wi-Fi is connected to Network and has the IP address 10.10.1.01
Network Name: Network.
Ask to join new networks
Known networks will be joined automatically. If no known networks are available, you will be asked before joining a new network.

4. Write down your machine's IP address.

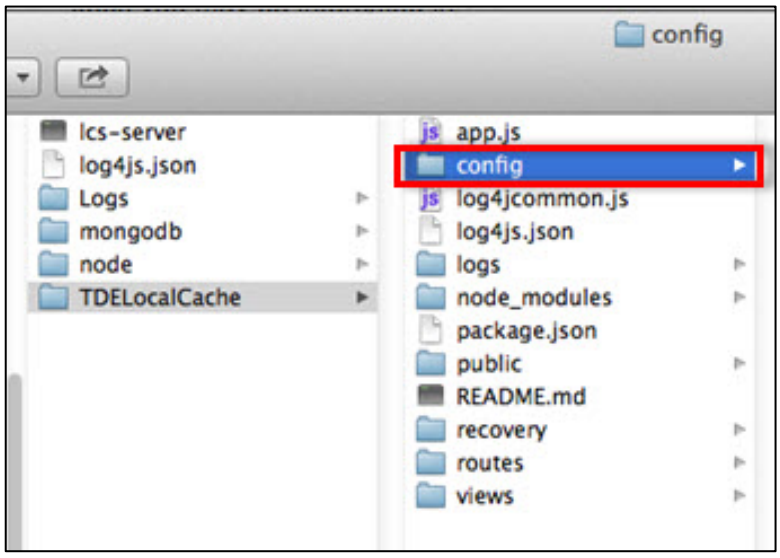
Setting Up the Port and Hostname or IP of your LCS

You need to specify which port the machine will use for the server and set the hostname or IP address of the LCS host machine. The default port is 3000. To set up the port, perform the following steps.

1. In the Applications folder (or whichever folder you chose), open the KITE-LCS folder.
2. Open the TDELocalCache folder.



3. Open the config folder.



4. Right click (or Control+click) the kitelcs.propertiesfile.
5. Click Open With.

6. Click TextEdit.
7. Verify that the “nodejsport” number is 3000. On the line “lcsHostServer” : “localhost”, remove “localhost” and add your hostname or the IP address of your LCS server. For example, “lcsHostServer” : “192.168.1.1”.

```
{
        "nodejsport" : 3000,
        "sslenabled" : true,
        "lcsHostServer" : "localhost"
}
```

8. From the File menu, click Save.
9. Exit TextEdit.

Allowing Access through Your OS X Firewall

To allow test takers to access the LCS, you need to set up two new firewall allowances.

Note: These instructions guide you through updating the Mac OS X Firewall. If your location uses a different firewall, contact your local system administrator with the information that needs to be added to the firewall.

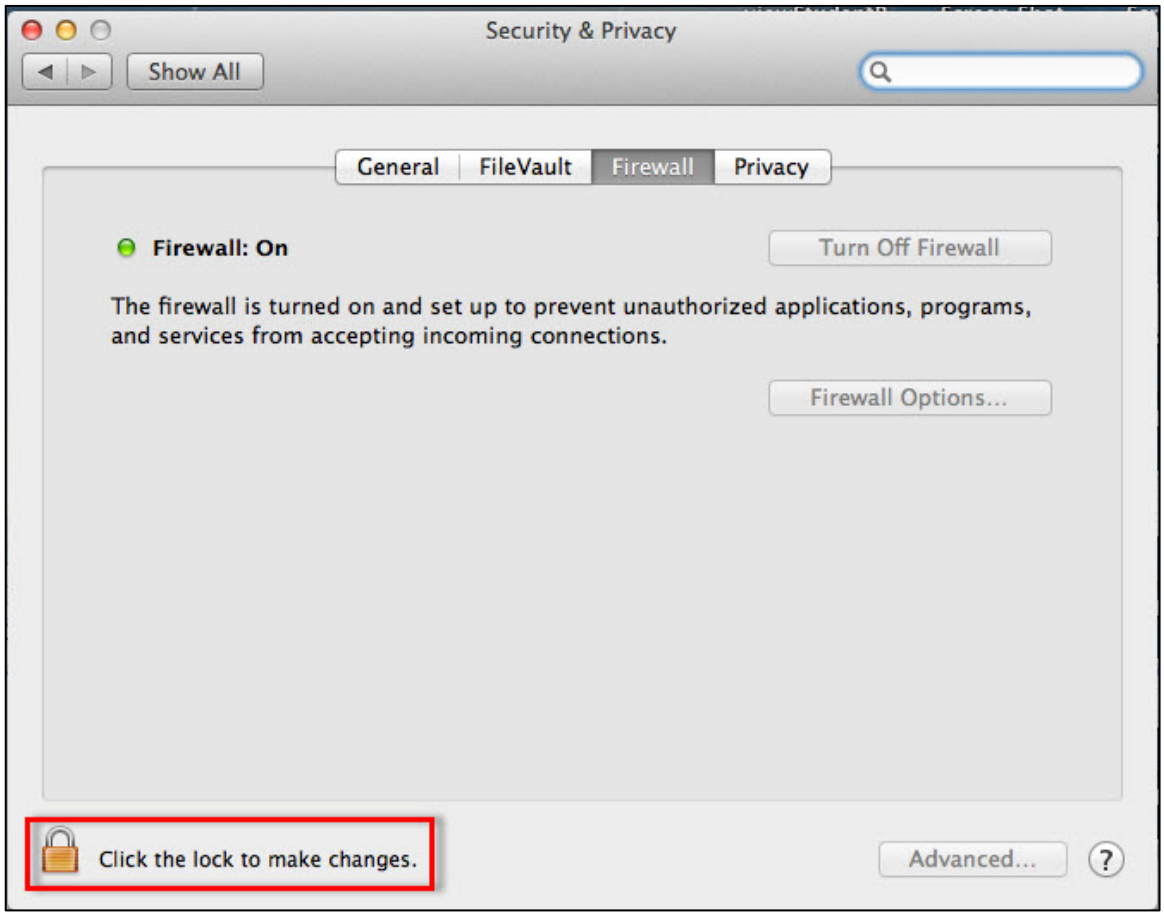
To allow access through a Mac OS X firewall, perform the following steps.

Note: You only need to make this firewall change once. The rule you are creating is applied until you manually remove it.

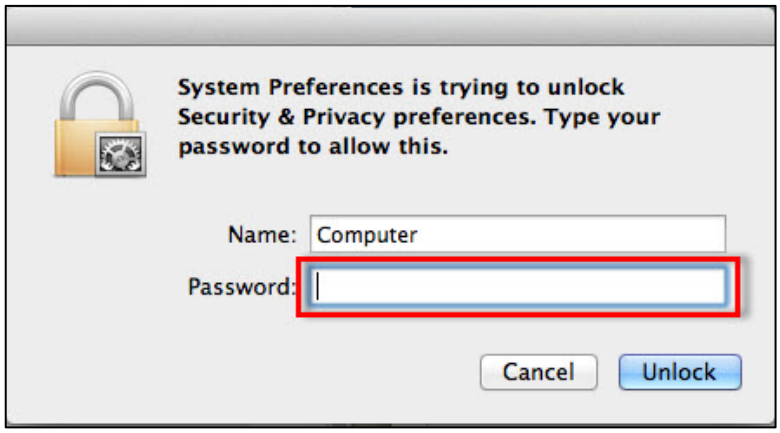
---

1. Open System Preferences.
2. Click Security & Privacy.

3. On the bottom left of the screen, click Click the lock to make changes.

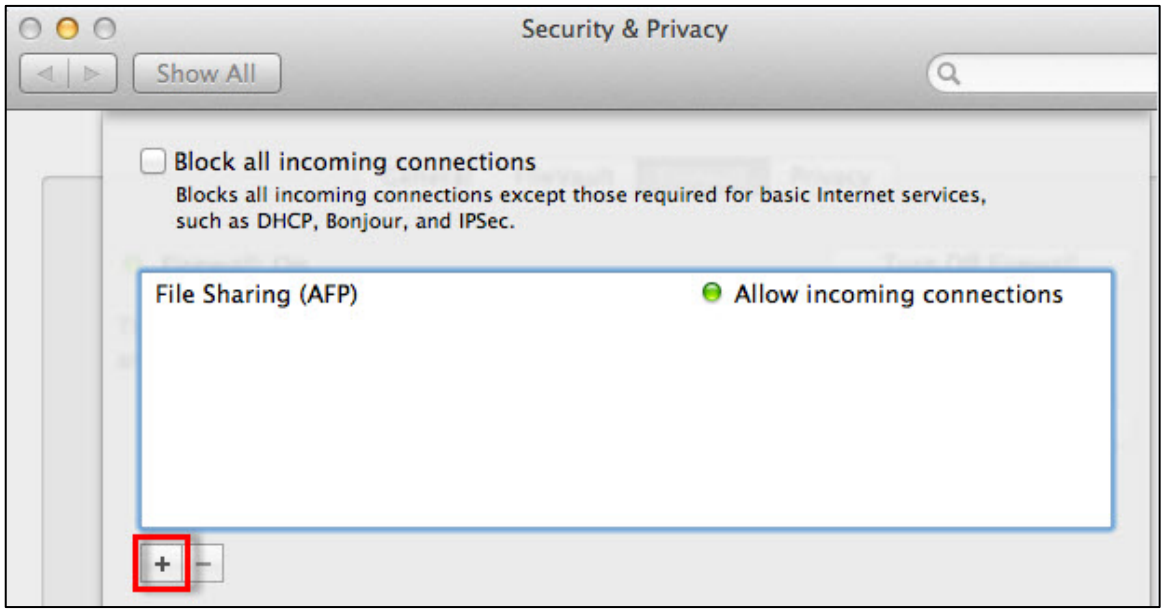


4. In the Password field, enter your administrator password.
5. Click Unlock.

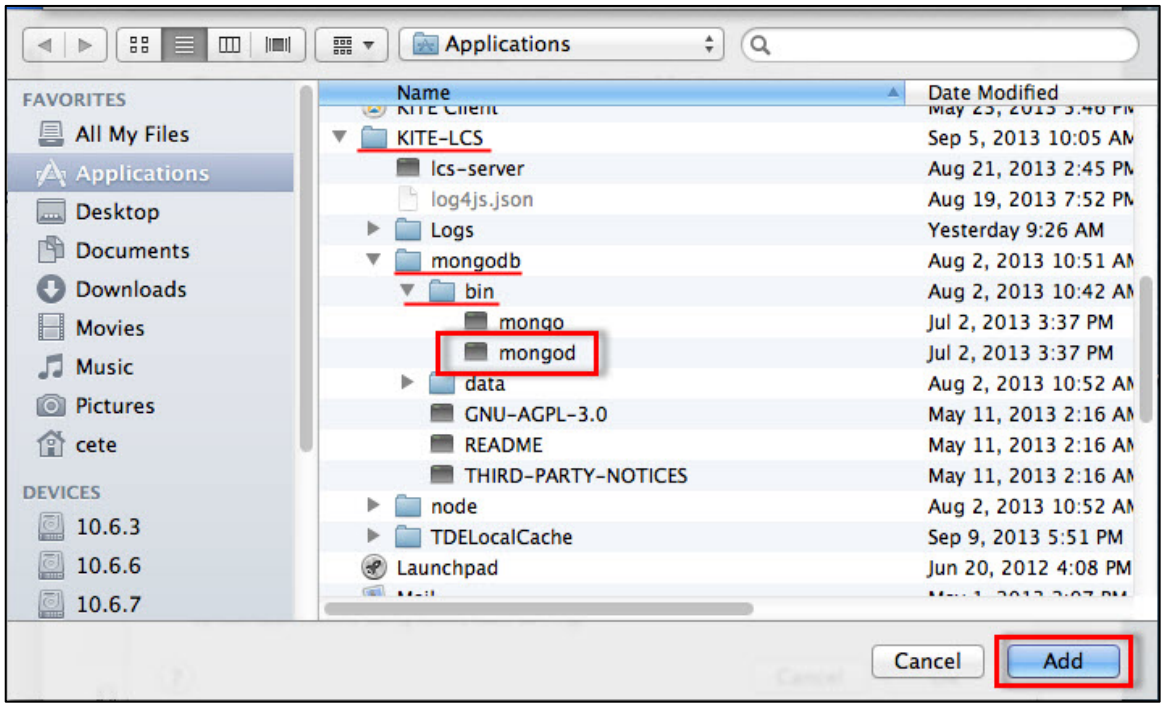


6. Click Firewall Options.

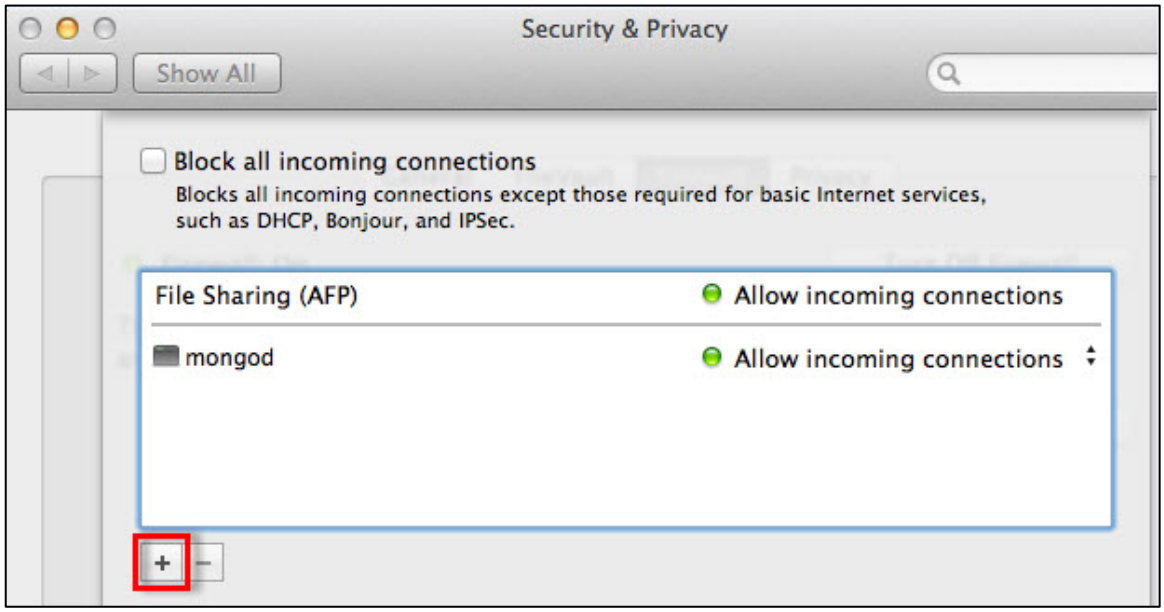
7. In the bottom left of the screen, click + to add the first connection.


Security & Privacy
Show All
Block all incoming connections
Blocks all incoming connections except those required for basic Internet services, such as DHCP, Bonjour, and IPSec.
File Sharing (AFP)
Allow incoming connections
+
–

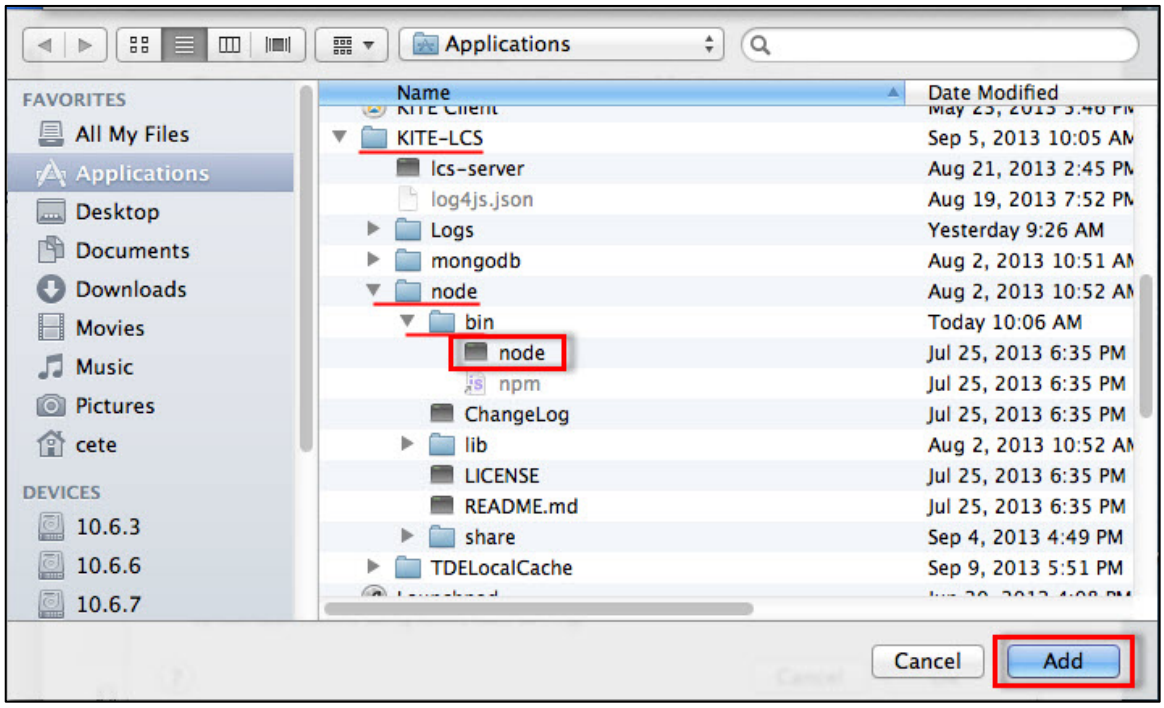
8. In the Applications window, click the KITE-LCS folder.
9. Click the mongodb folder.
10. Click the bin folder.
11. Click the mongod file.
12. Click Add.



13. In the bottom left of the screen, click + to add the second connection.

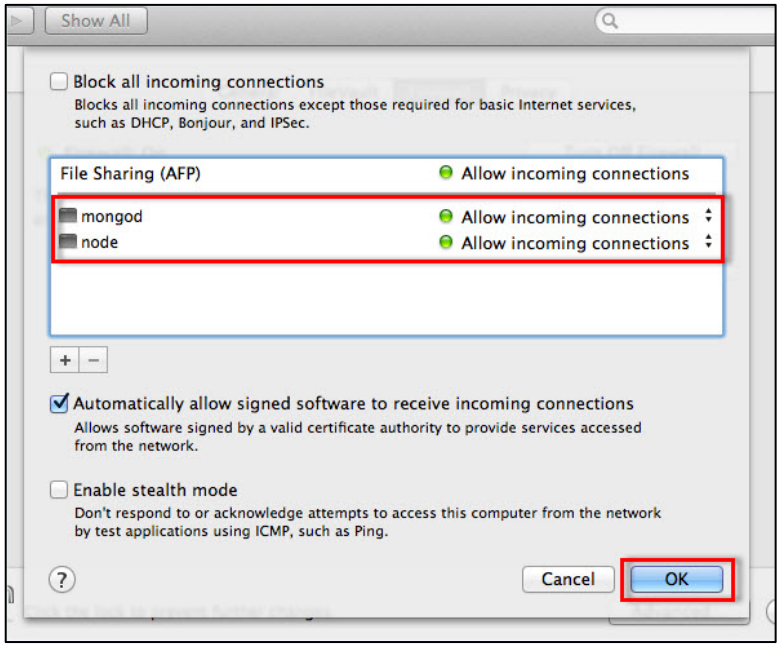


14. In the Applications window, click the KITE-LCS folder.
15. Click the node folder.
16. Click the bin folder
17. Click the node file.
18. Click Add.

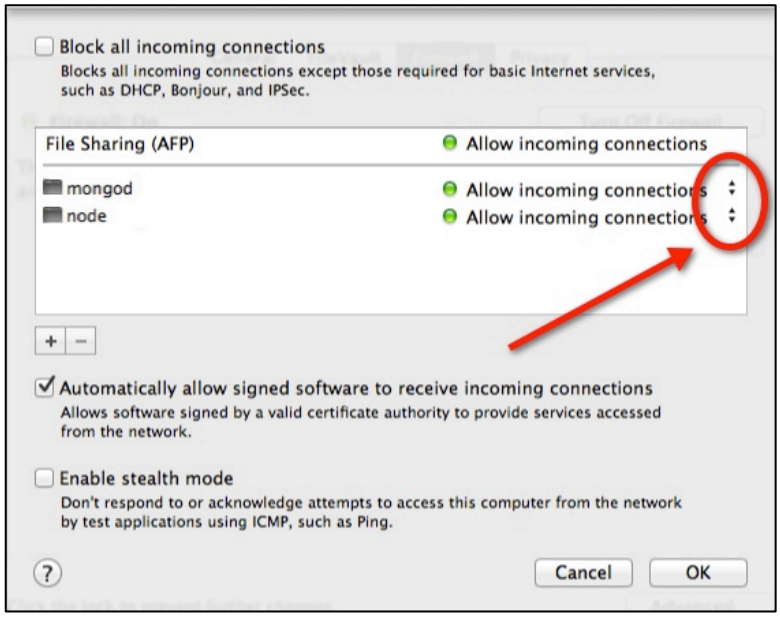


19. Verify that the two connections have a green light and state the phrase Allow incoming connections.

20. Click OK.


Show All
Block all incoming connections
Blocks all incoming connections except those required for basic Internet services, such as DHCP, Bonjour, and IPSec.
File Sharing (AFP)
Allow incoming connections
mongod
Allow incoming connections
node
Allow incoming connections
Automatically allow signed software to receive incoming connections
Allows software signed by a valid certificate authority to provide services accessed from the network.
Enable stealth mode
Don't respond to or acknowledge attempts to access this computer from the network by test applications using ICMP, such as Ping.
Cancel
OK

21. If the connections do not have a green light or do not contain the appropriate phrase, click the small arrows on the right side of the screen to make a change.


Block all incoming connections
Blocks all incoming connections except those required for basic Internet services, such as DHCP, Bonjour, and IPSec.
File Sharing (AFP)
Allow incoming connections
mongod
Allow incoming connections
node
Allow incoming connections
Automatically allow signed software to receive incoming connections
Allows software signed by a valid certificate authority to provide services accessed from the network.
Enable stealth mode
Don't respond to or acknowledge attempts to access this computer from the network by test applications using ICMP, such as Ping.
Cancel
OK

22. Click OK.

Setting up a Windows LCS

Note: The instructions for setting up an LCS are platform-specific. Be sure you are using the instructions for the operating system that matches the machine you are using.

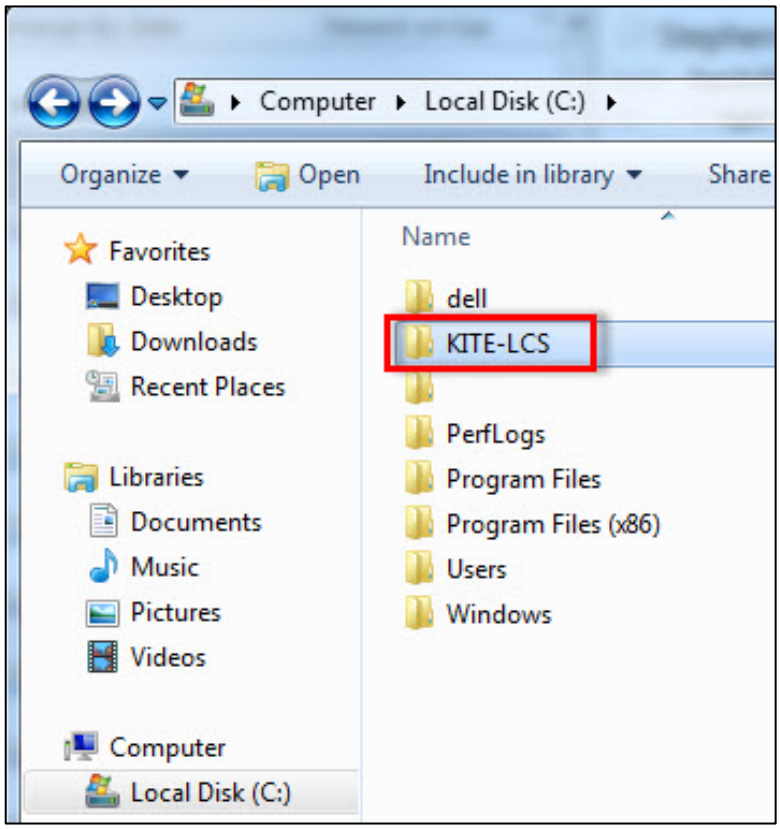
After downloading the LCS file, you can begin setting up your local caching server. You will need to:

Activate the server,
Use or find your IP address,
Set up the port, and
Allow access through your firewall.

Activating the Server

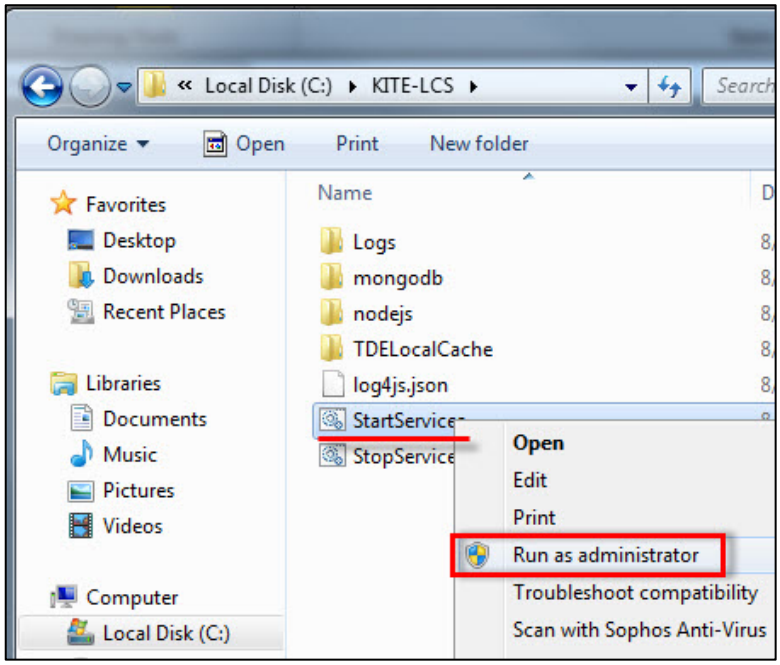
To activate the server, perform the following steps.

1. Add a folder to the root of C:\ called KITE-CLS. Then extract the zip file to the KITE-LCS folder you created. Open the KITE-LCS folder.



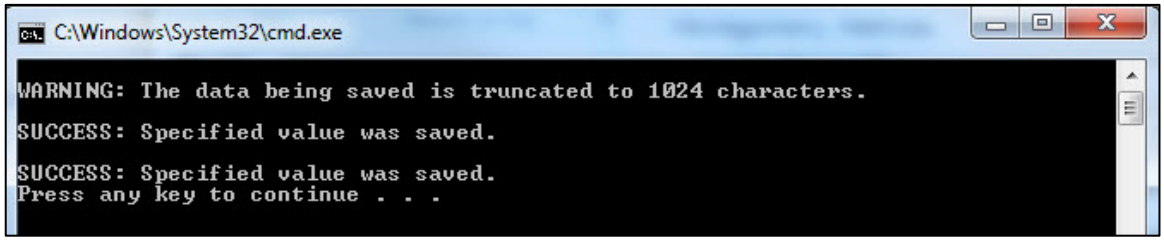
2. Right click on the StartServices file.

3. Click Run as administrator.

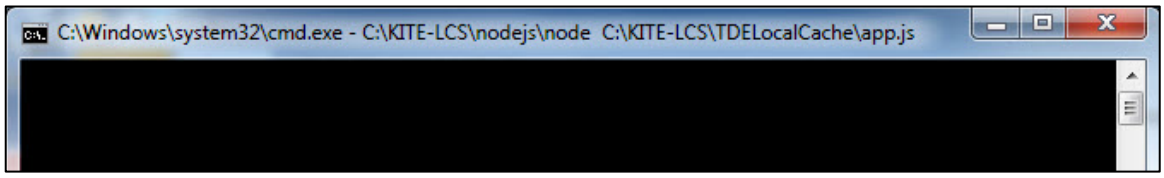


Note: Administrative access is required to set up the LCS.

4. When the black command box displays "Press any key to continue…," press Enter.


C:\Windows\System32\cmd.exe
WARNING: The data being saved is truncated to 1024 characters.
SUCCESS: Specified value was saved.
SUCCESS: Specified value was saved.
Press any key to continue . . .

5. When the blank command box appears, your server is running.

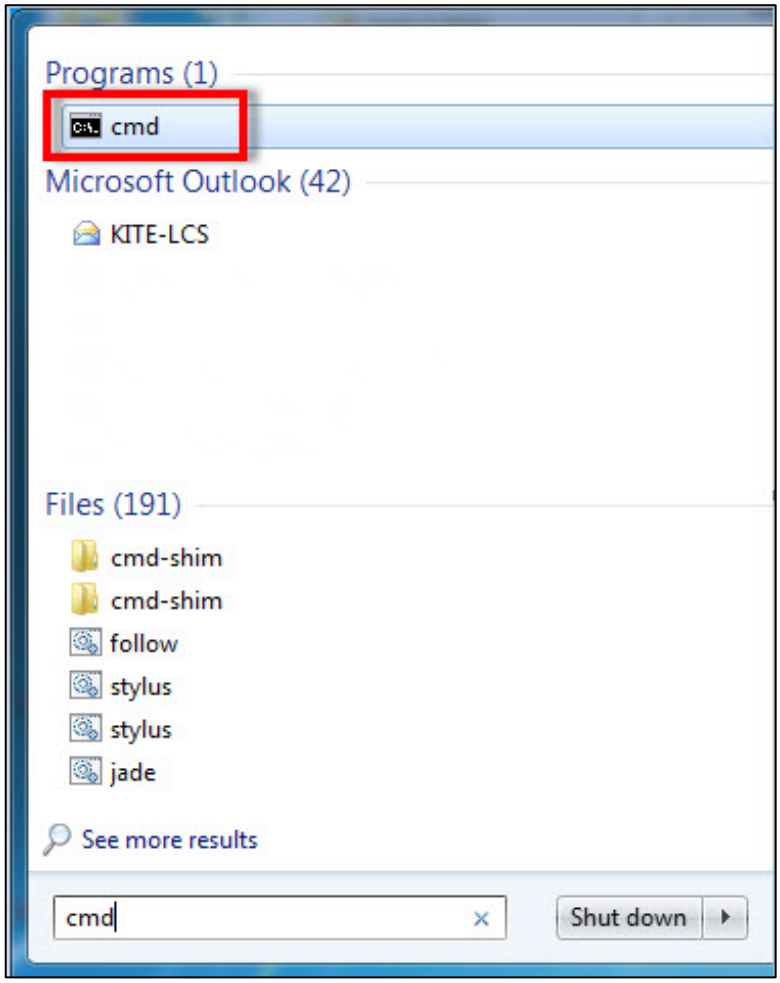


Note: This box MUST stay open to allow testing using the LCS. If you accidentally close the window, repeat the steps in this section.

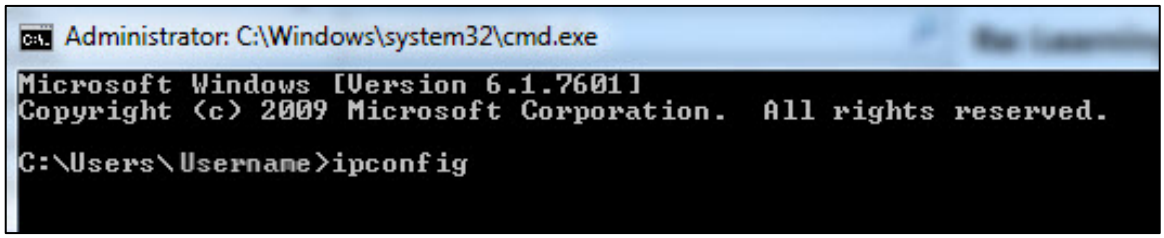
Finding Your IP Address

If you know your computer's IP address, skip to the Testing the LCS Web Address section. If you do not know your computer's IP address, perform the following steps.

1. In the bottom left of your screen, click the Start button.
2. In the Search field, type cmd.
3. Press Enter.

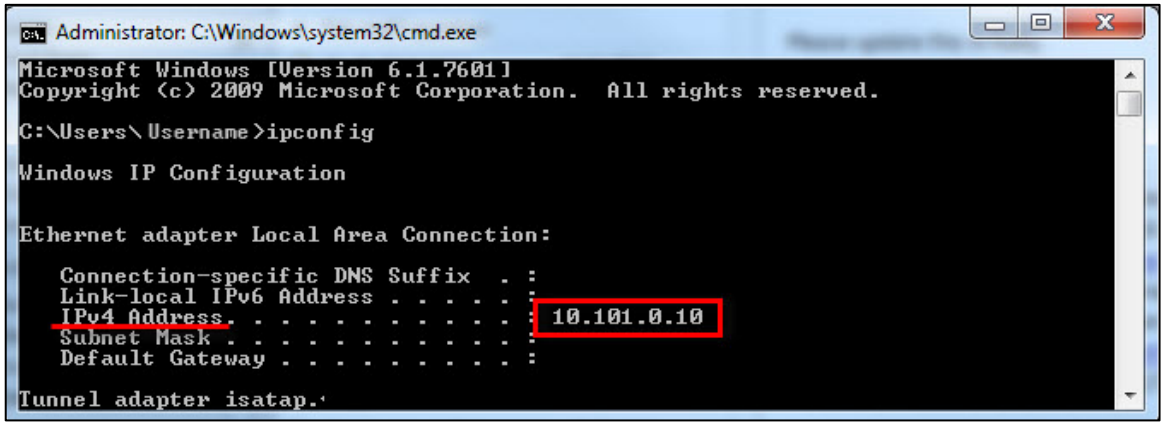


4. In the command box, type ipconfig.



5. Press Enter.
   Information about your Local Area Connection will fill the box, including your computer's IP address.

Note: You are looking for the IPv4 address. It will be a sequence of numbers like the example given below.

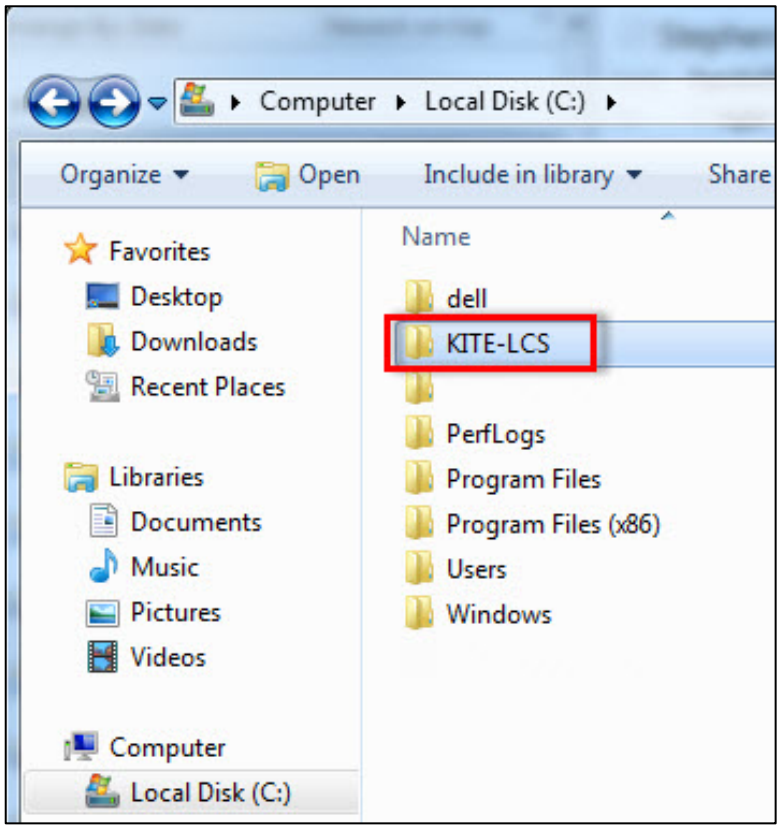

Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Username>ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . . :
IPv4 Address. . . . . : 10.101.0.10
Subnet Mask . . . . . :
Default Gateway . . . . . :
Tunnel adapter isatap.

6. Write down your machine's IP address.

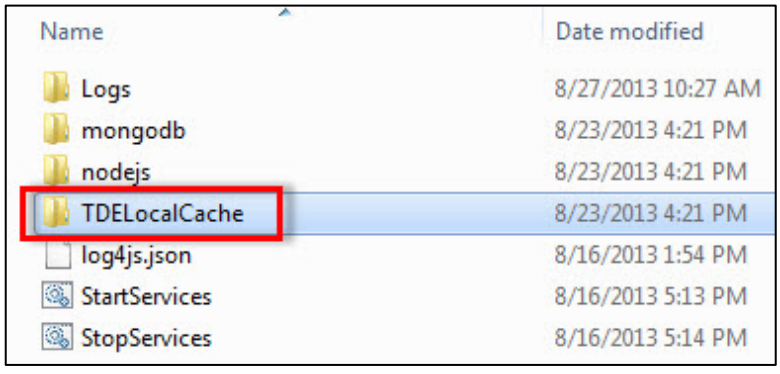
Setting Up the Port

You need to specify which port the machine will use for the server. The default is port 3000. To set up the port, perform the following steps.

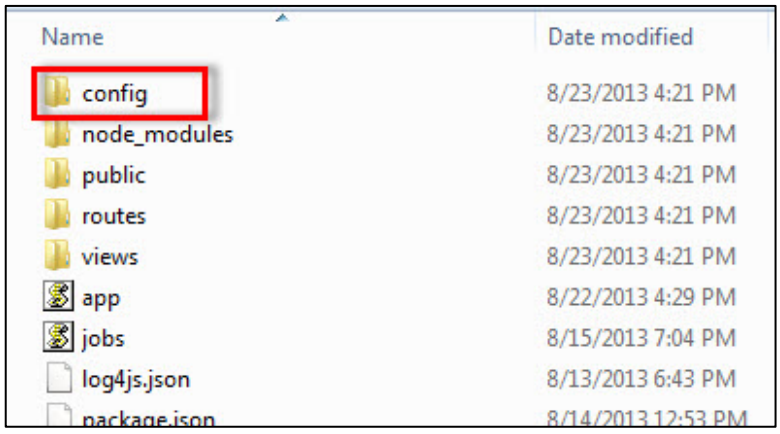
1. Click the KITE-LCS folder.



2. Click the TDELocalCache folder.



3. Click the config folder.



4. Right click on kitelcs.properties.
5. Click Open with.
6. Click Notepad.
7. Verify that the "nodejsport" number is 3000 (you may change it to your preferred port). On the line "lcsHostServer" : "localhost", remove "localhost" and add your hostname or the IP address of your LCS server. For example, "lcsHostServer" : "192.168.1.1".

```
{
        "nodejsport" : 3000,
        "sslenabled" : true,
        "lcsHostServer" : "localhost"
}
```

8. From the File menu, click Save.

Allowing Access through Your Windows Firewall

To allow test takers to access the LCS, you must first set up a new rule to allow them past your firewall.

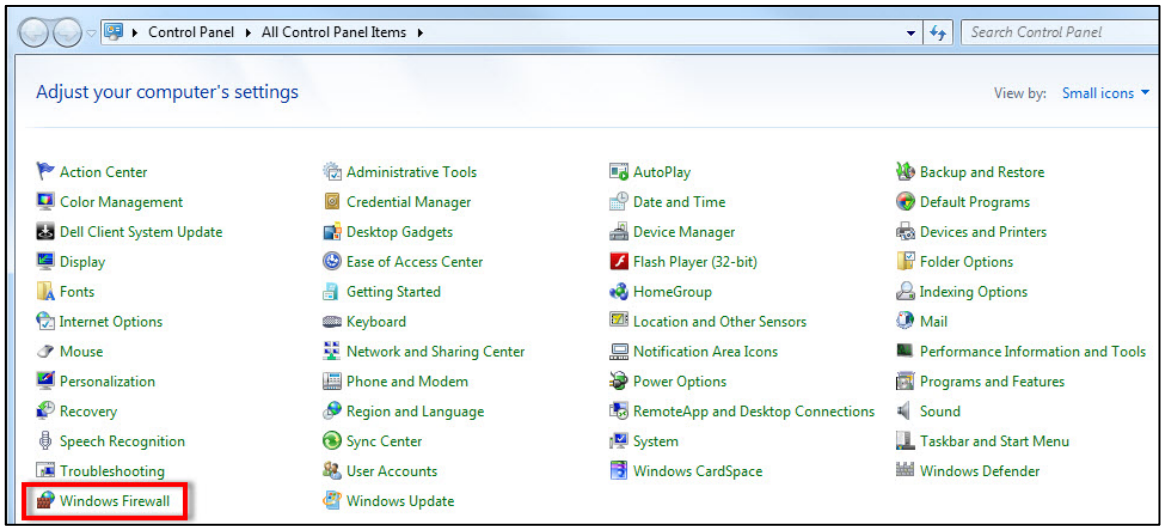
Note: These instructions guide you through updating the Windows firewall. If your location uses a different firewall, contact your local system administrator with the information that needs to be added to the firewall.

To allow access through a Windows firewall, perform the following steps.

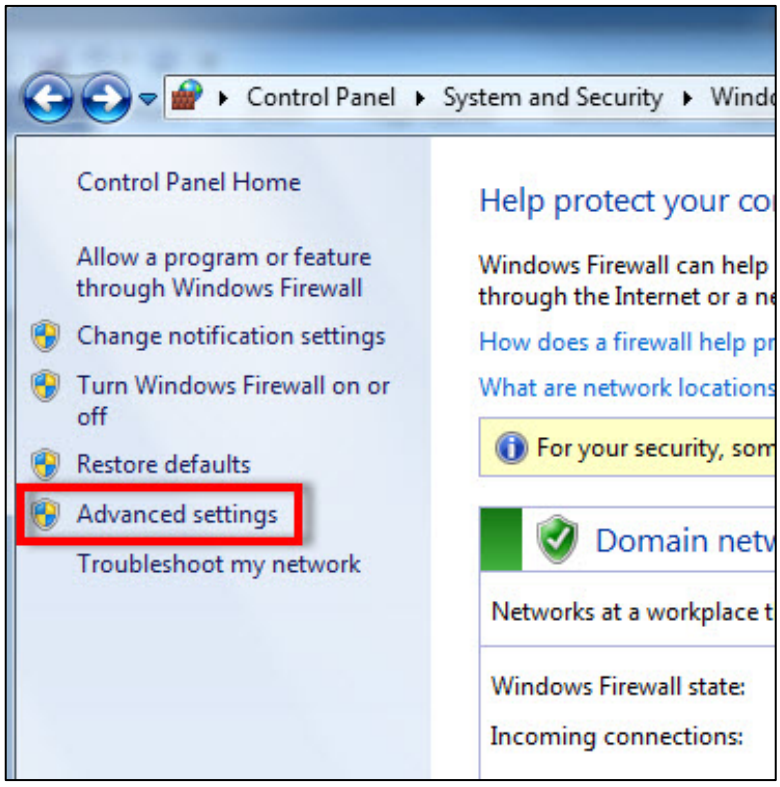
Note: You only need to make this firewall change once. The new rule you are creating will continue to be applied until you manually remove it.

---

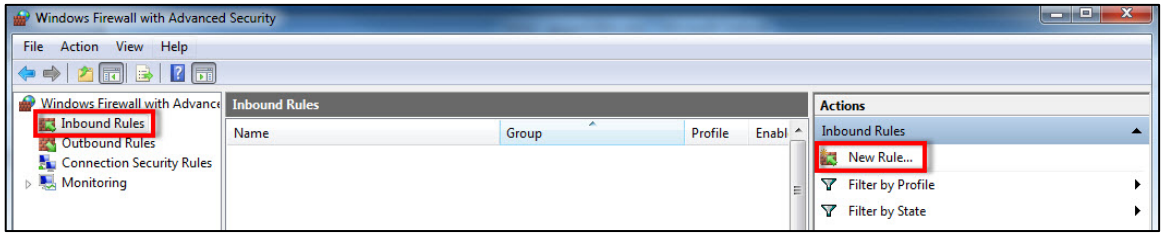
1. From the Control Panel, click Windows Firewall.



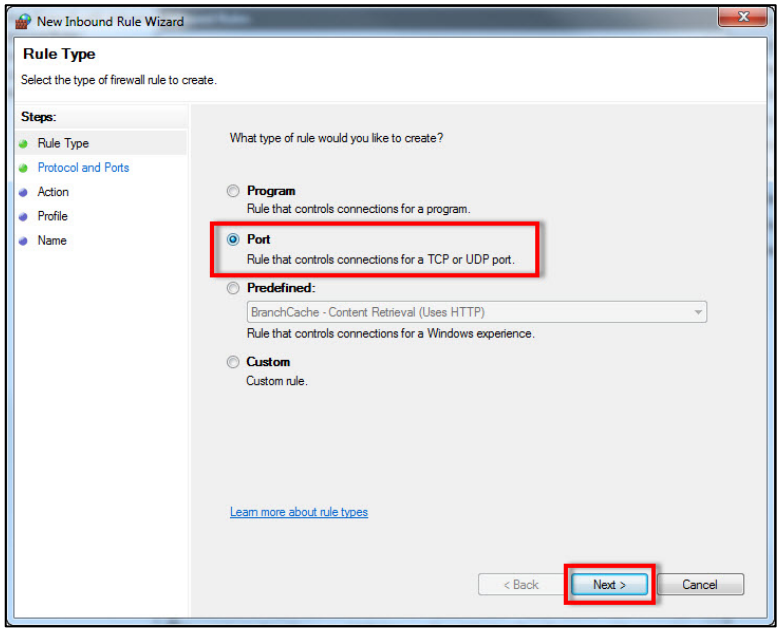
2. Click Advanced settings.



3. Click Inbound Rules.
4. Click New Rule.



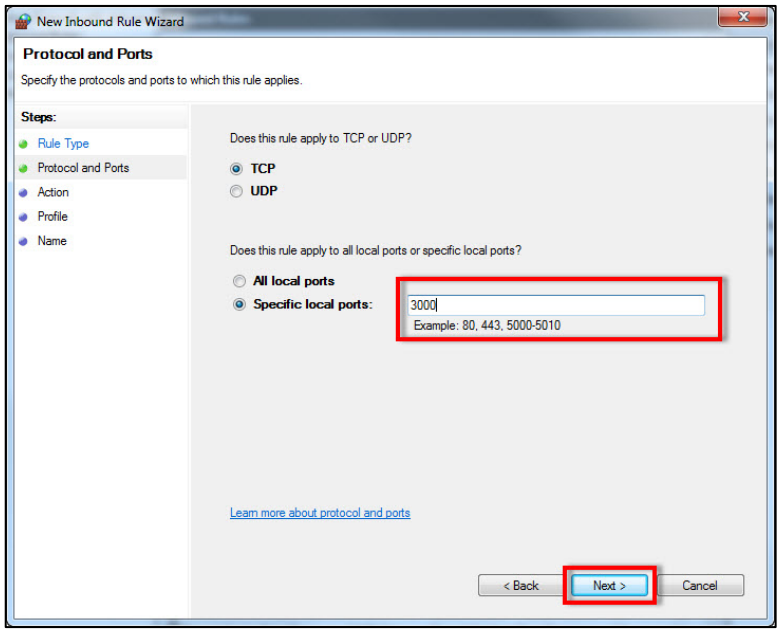
5. In the New Inbound Rule Wizard window, select Port.
6. Click Next.



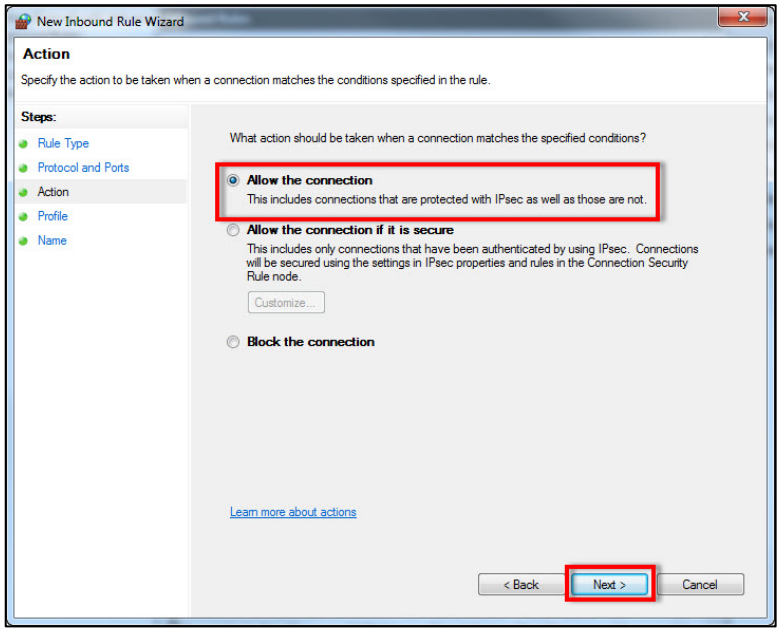
7. Select TCP.
8. Select Specific local ports and verify that the port is 3000.

> Hint: The default value is 3000, but you may change this if you have a reason to do so.

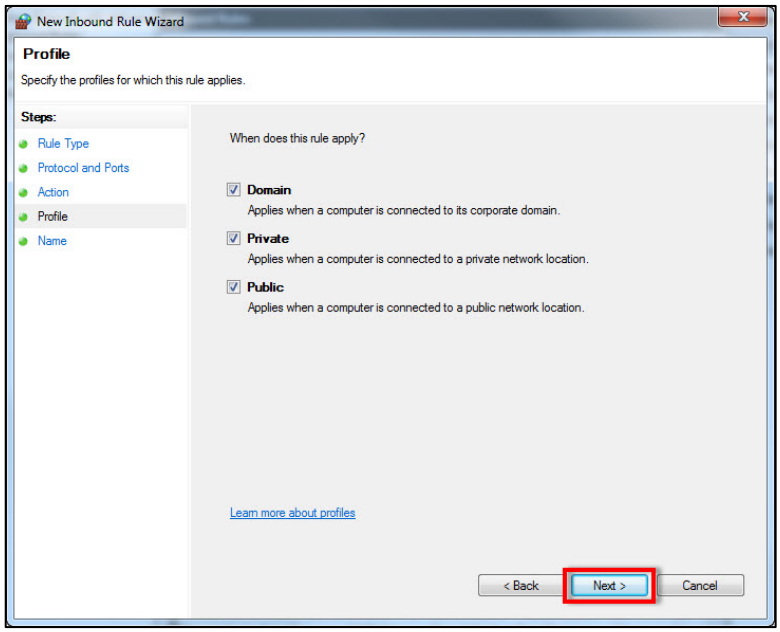
9. Click Next.



10. Select Allow the connection.
11. Click Next.


New Inbound Rule Wizard
Action
Specify the action to be taken when a connection matches the conditions specified in the rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
What action should be taken when a connection matches the specified conditions?
Allow the connection
This includes connections that are protected with IPsec as well as those are not.
Allow the connection if it is secure
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.
Customize...
Block the connection
Learn more about actions
< Back
Next >
Cancel

12. Verify that Domain, Private, and Public are all selected.
13. Click Next.

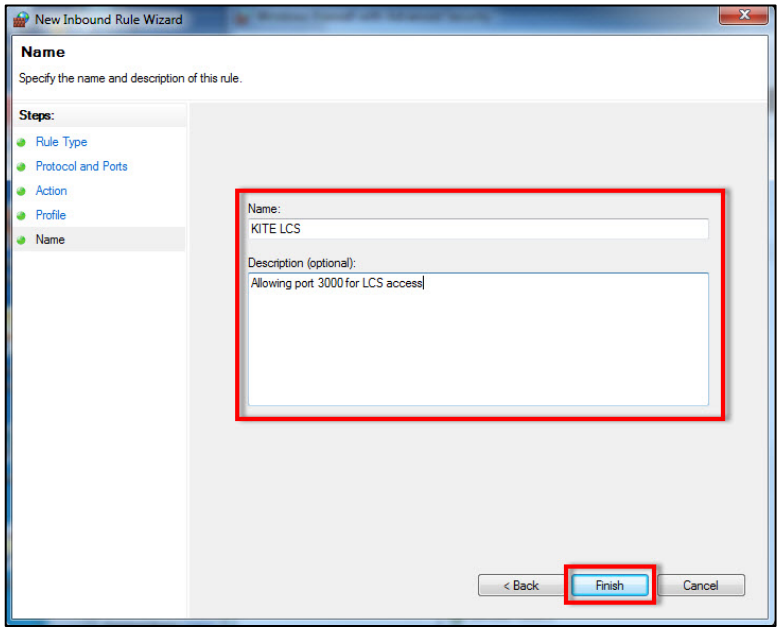

New Inbound Rule Wizard
Profile
Specify the profiles for which this rule applies.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
When does this rule apply?
Domain
Applies when a computer is connected to its corporate domain.
Private
Applies when a computer is connected to a private network location.
Public
Applies when a computer is connected to a public network location.
Learn more about profiles
< Back
Next >
Cancel

14. In the Name field, type KITE LCS.
15. In the Description field, type Allowing port 3000 for LCS access.

Note: If you are using a port other than 3000 on your LCS, use that port number in the description field instead.

---

16. Click Finish.



Setting Up a Linux LCS

Note: The instructions for setting up an LCS are platform-specific. Be sure you are using the instructions for the operating system that matches the machine you are using.

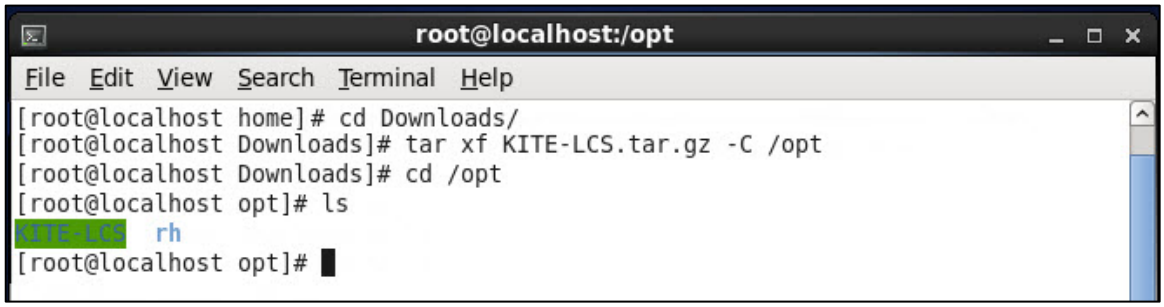
After downloading the LCS file, you can begin setting up your LCS by performing the following tasks:

Install the LCS,
Activate the server,
Use or find your IP address,
Set up the port (optional), and
Allow access through your firewall.

Installing the LCS

To install the LCS, perform the following steps.

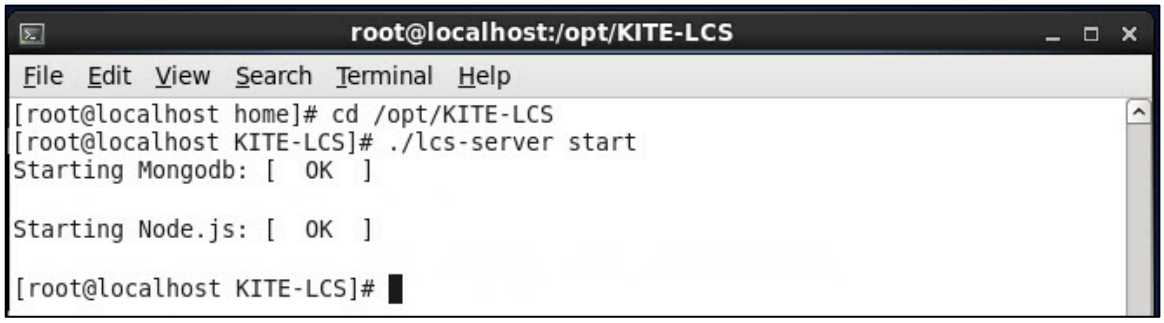
1. Log in to Linux as a root or sudo user.
2. Launch the Terminal.
3. Change the directory to where you downloaded the KITE LCS.
4. If you are the root user, run the following command to install the application into the opt directory: tar xf KITE-LCS.tar.gz –C /opt
5. If you are the sudo user, run the following command to install the application into the opt directory: sudo tar xf KITE-LCS.tar.gz –C /opt
6. When the command succeeds, you will see the KITE-LCS file in the opt directory.



Activating the Server

To activate the server, perform the following steps.

1. Open the Terminal as a root or sudo user.
2. Change the directory to the KITE-LCS directory: cd /opt/KITE-LCS
3. To start the LCS, use the following command: ./lcs-server start

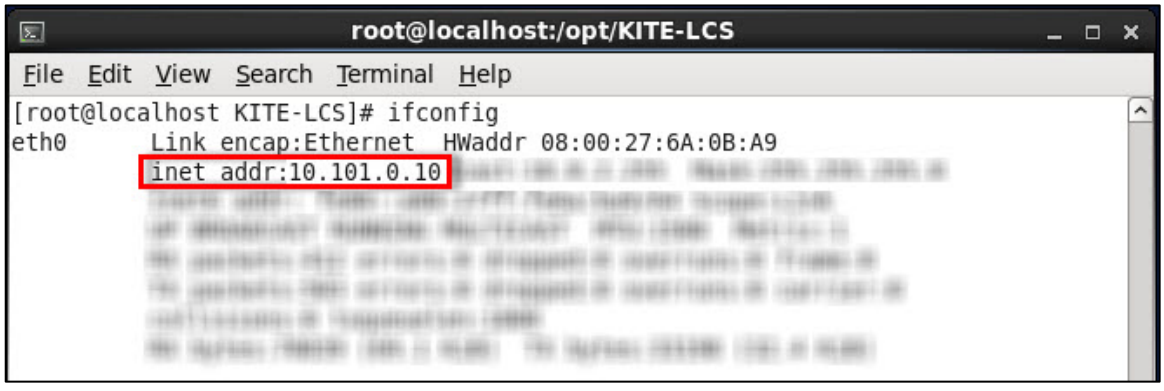


Note: Any time the computer is shut down or restarted, you must restart the LCS.

Finding Your IP Address

If you know your computer's IP address, skip to the Creating the LCS Web Address section. If you do not know your computer's IP address, perform the following steps.

1. Launch the Terminal.
2. Enter the following command: ifconfig
3. Information about your Local Area Connection will fill the box, including your computer's IP address in the inet addr area.



4. Write down your machine's IP address.

Note: We recommend assigning a static IP address to your machine.

Changing the Port and Setting the LCS Host Name

Note: We suggest that you leave the port as the default of 3000. You must change the lcsHostServer setting from "localhost" to either the hostname or IP of the LCS host.

.

1. Open the Terminal as a root or sudo user.
2. Change to the following directory: /opt/KITE-LCS/TDELocalCache/config
3. Open the kitelcs.properties file in an editor: vi kitelcs.progerties
4. Use the keyboard arrow and the delete key to delete "localhost".

```
{
        "nodejsport" : 3000,
        "sslenabled" : true,
        "lcsHostServer" : "localhost"
}
```

5. Add your LCS host name or IP address by pressing the "I" key (insert).
6. Type the IP number or hostname.
7. Press the Escape key to save and exit.
8. Type: :wq
9. Restart the service by going back to cd/opt/KITE-LCS
10. Type the command ./lcs-server start

Allowing Access through Your Firewall

To allow test takers to access the LCS, you will need to alter your Firewall settings.

Note: Your location may use additional firewall securities; contact your local system administrator with the information that needs to be added to the Firewall if this is the case.

You will need to open the port you configured (port 3000 is recommended) in your Firewall. If you do not know how to do this, refer to the help pages below for assistance in specific Linux distribution firewalls.

Linux Distribution	Documentation on the Web
CentOS	http://www.centos.org/docs/5/html/Deployment_Guide-en-US/ch-fw.html
Redhat	https://access.redhat.com/site/documentation/en-US/Red_Hat_Enterprise_Linux/3/html/System_Administration_Guide/ch-basic-firewall.html
Fedora	http://fedoraproject.org/wiki/SystemConfig/firewall
Ubuntu	https://wiki.ubuntu.com/UncomplicatedFirewall?action=show&redirect=UbuntuFirewall

Testing the LCS Web Address

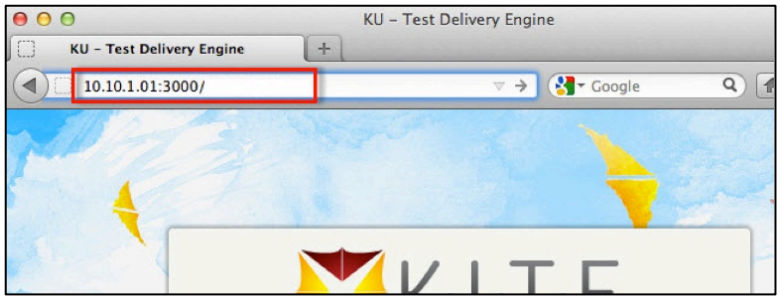
Note: Testing the LCS Web Address can be done from a machine running any operating system as long as you have access to a browser approved for use with KITE. Refer to the beginning of this manual for that information.

To test the LCS web address, perform the following steps.

Note: The example below uses the IP Address 10.101.0.10 and the Port Number 3000. Your server may have a different IP address and port number.

1. Open a web browser.
2. In the address bar, type your IP address followed by a colon and your port number.

Hint: In our example, the IP address is 10.101.0.10 and the port is 3000, so we type 10.101.0.10:3000/ (with no space between the numbers and no period at the end).



3. When the KITE log in screen appears, you have successfully set up the LCS.

Note: If the KITE log in screen does not appear, double check your IP address.

Note: If the LCS still does not work, try going through the Activating the Server section once more.

Hint: If going through the Activating the Server section again does not help, refer to the Contacting the Help Desk section at the end of this document.

Note: Right now, you can access the server, but you must still configure each machine that will run the KITE Client.

Checking Access Settings

Note: Checking Access Settings can be done from a machine running any operating system as long as you have access to a browser approved for use with KITE. Refer to the beginning of this manual for the list of approved browsers.

If you have set up your server, including updating your firewall, and tested your IP address, other computers should be able to access the KITE LCS, but you should check to be sure. To check access settings, perform the following steps.

1. Move to another computer.
2. Open a browser.
3. Type the LCS web address.

Note: Format your web address as follows: http://[IP Address]:[Port]. For example, with an IP Address of 10.101.0.10 and a port of 3000, you would type http://10.101.0.10:3000

4. Press Enter.
   The KITE log in screen appears, indicating you have completed setup.

Note: If you get an error screen, the LCS has not been set up correctly, the Firewall settings are incorrect, the server has been closed, or the computer is not properly connected to the internet. Review the steps in this manual to determine the problem.

Configuring the KITE Client

Note: The instructions for configuring the KITE Client are platform-specific. Be sure you are using the instructions for the operating system that matches the machine you are using.

You must configure the downloaded KITE Client to point to the LCS on every testing machine. This will direct the test takers to the proper place.

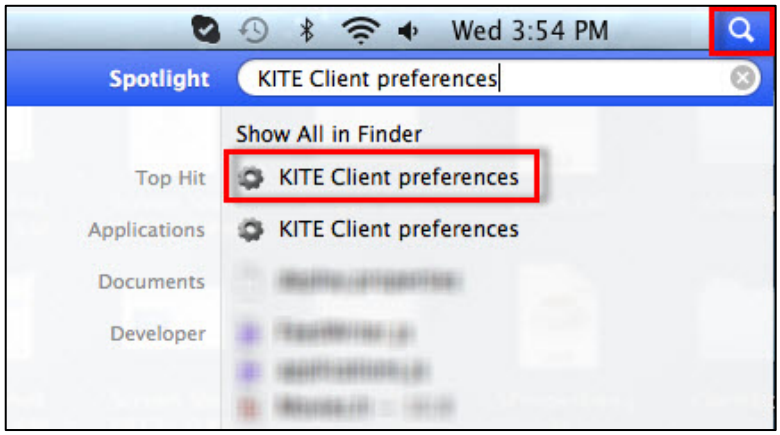
Setting Up a Macintosh KITE Client

After the LCS is set up, you need to set up each desktop client (test machine) so that it points to the LCS.

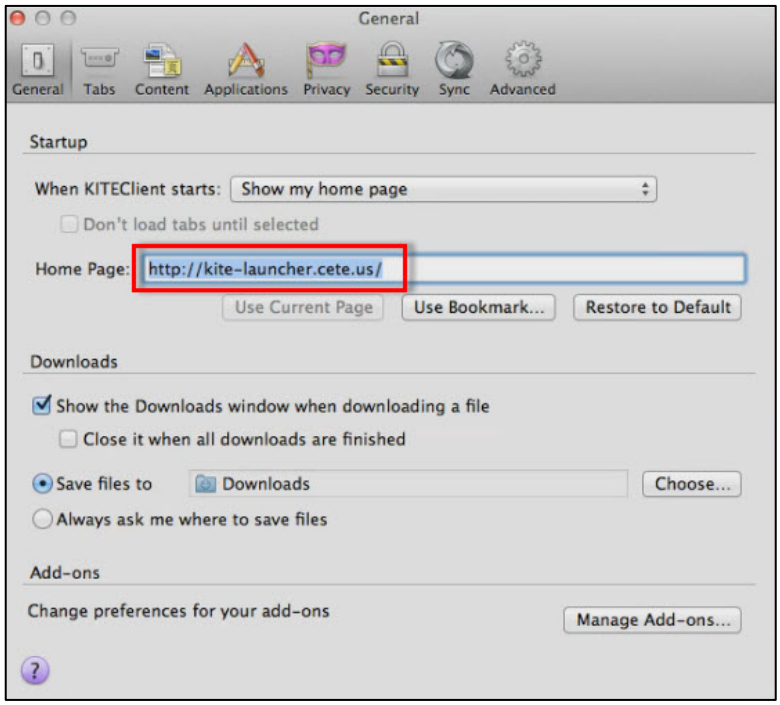
Note: You must configure each machine that test takers will use.

To configure a Mac test machine, perform the following steps.

1. On the upper right of your screen, click the magnifying glass to open Spotlight.
2. In the Spotlight search field, type KITE Client preferences.
3. Press Enter.

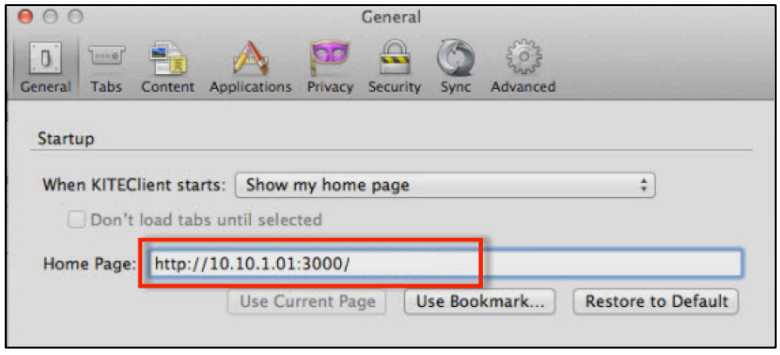


4. Locate the web address next to the Home Page field.



5. Delete the current web address.
6. In the Home Page field, type the web address of your LCS.

Note: Format your web address as follows: http://[IP Address]:[Port]. For example, with an IP Address of 10.101.0.10 and a Port of 3000, you would type http://10.101.0.10:3000



7. Close the window.
   The desktop KITE Client will now automatically direct the test taker to your LCS.

Setting Up a Windows KITE Client

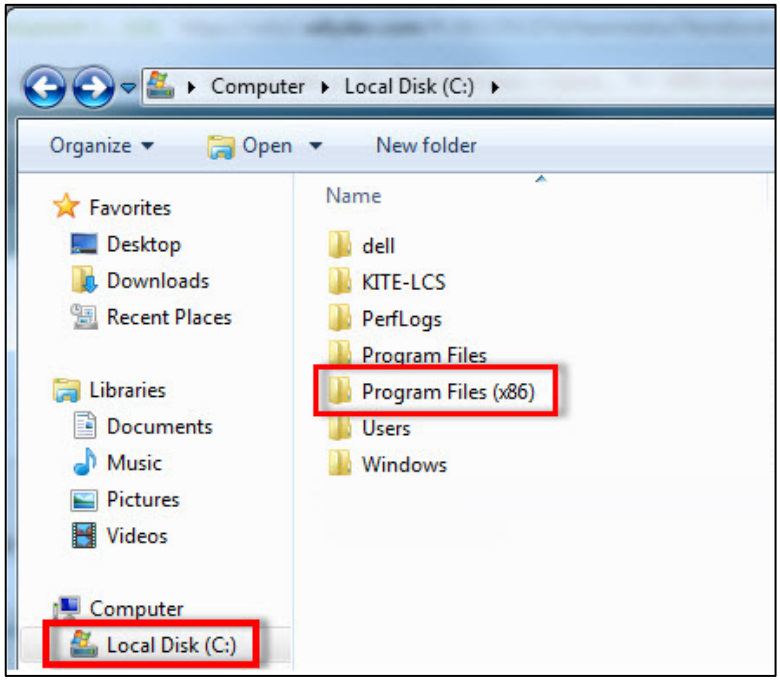
Note: If you are using mass install software to download the KITE Client on each testing machine, you can likely use that to distribute the application file. The following process only describes how to edit the individual application file.

After the LCS is set up, you need to set up each desktop client (test machine) so that it points to the LCS.

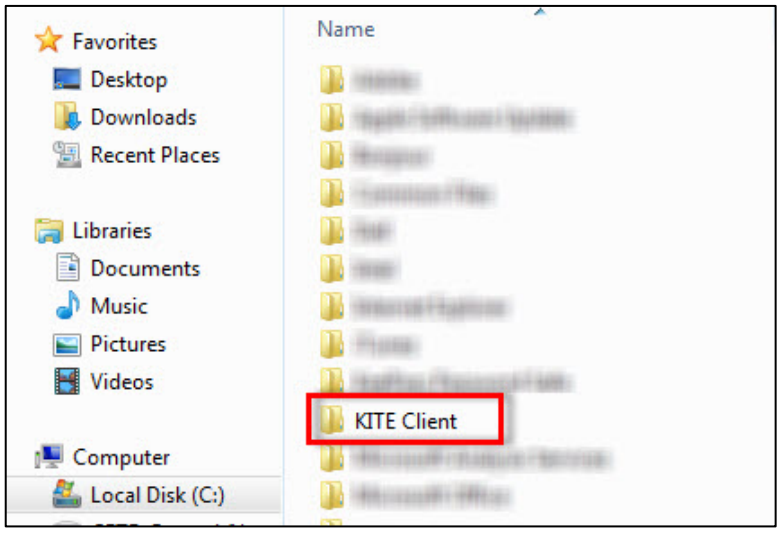
Note: You must configure each machine that test takers will use.

To configure a Windows test machine, perform the following steps.

1. On the machine, click Start.
2. Click Local Disk (C:).
3. Click Program Files (x86).



4. Open the KITE Client file.

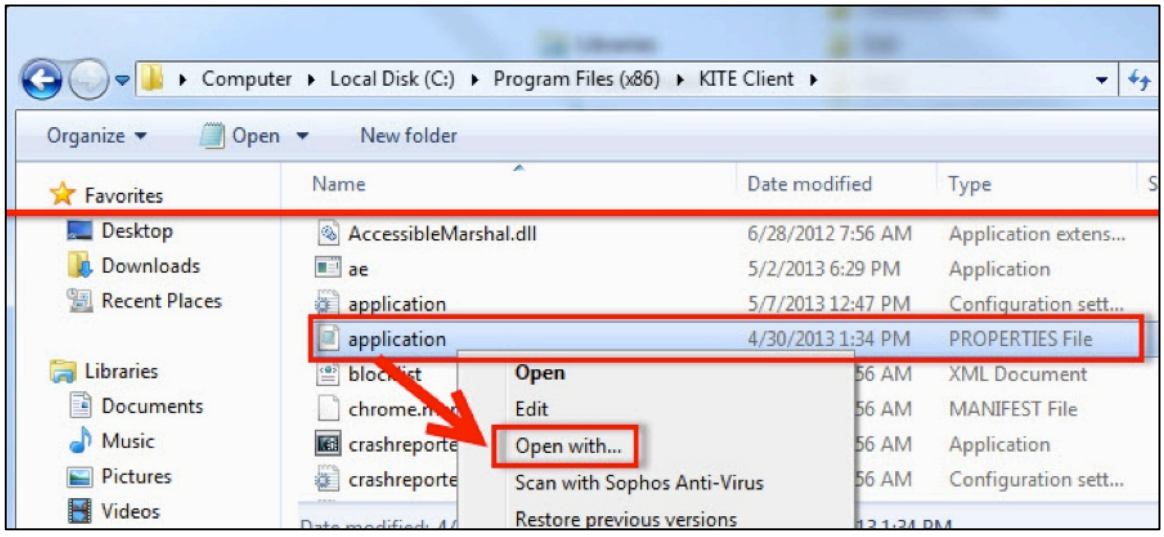


5. Right click on the application file.

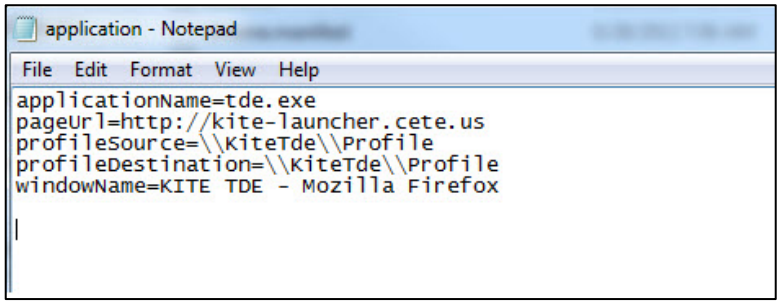
Note: There may be two files that are named application, but the correct one has "PROPERTIES File" as the type.

---

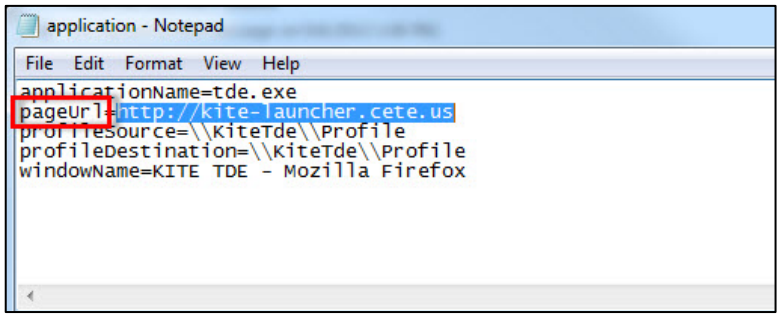
6. Click Open with.



7. Choose the program Notepad.
   The application file will open.

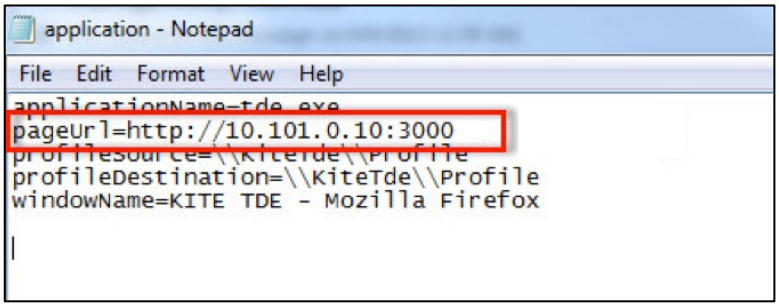


8. Locate the line that begins pageUrl.



9. Delete the web address on that line.
10. Replace it with the web address of your LCS.

Note: Format your web address as follows: http://[Your IPv4 address]:[port number]



Hint: In the example above, our IPv4 address is 10.101.0.10 and the port number is 3000, so our LCS has an address of http://10.101.0.10:3000

11. From the File menu, click Save.
    The desktop KITE client will now direct the test taker to your LCS.

Using the LCS Admin Page

Note: The LCS Admin Page can be viewed from a machine running any operating system as long as you have access to a browser approved for use with KITE. The beginning of this manual lists compatible browsers.

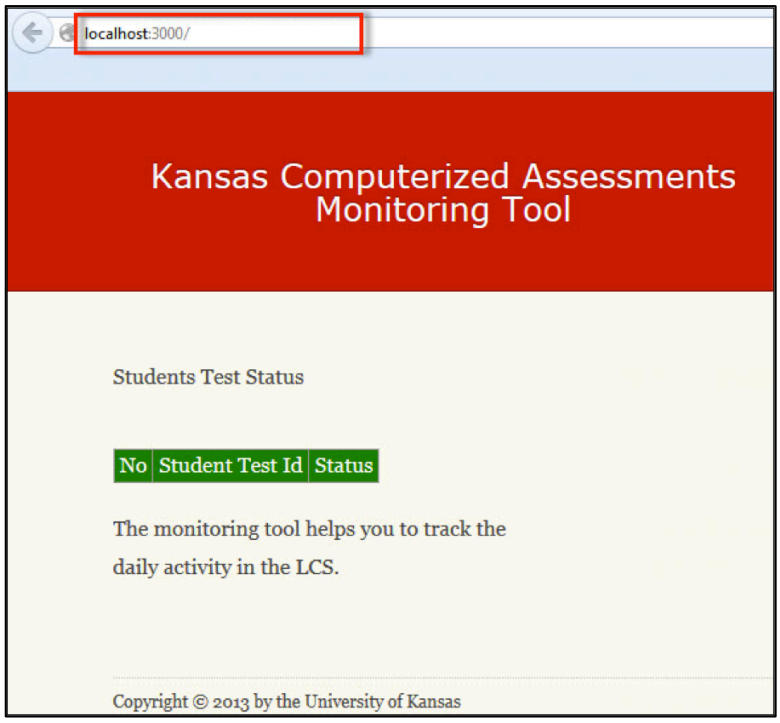
The LCS Admin page provides the details of students who are taking tests using your LCS.

Note: To access the LCS Admin page, you need to have the LCS running.

To use the LCS Admin page, perform the following steps.

Hint: The screen shots use the port 3000. Your port may be different.

1. Once the LCS is running, open a browser window.
2. In the address bar, type localhost:[port number]/TDE/admin/index.htm
   Example: http://localhost:3000/TDE/admin/index.htm


localhost:3000/
Kansas Computerized Assessments Monitoring Tool
Students Test Status
No
Student Test Id
Status
The monitoring tool helps you to track the daily activity in the LCS.
Copyright © 2013 by the University of Kansas

If students are taking a test, information about their Test ID and Status will display on this screen.

Shutting Down the LCS

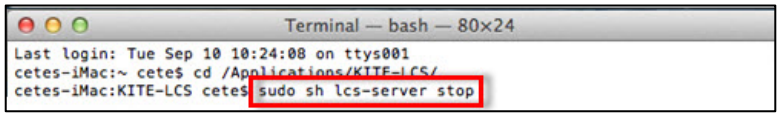
When testing has finished, you should shut down the LCS.

Note: The instructions for shutting down the LCS are platform-specific. Be sure you are using the instructions for the operating system that matches the machine you are using.

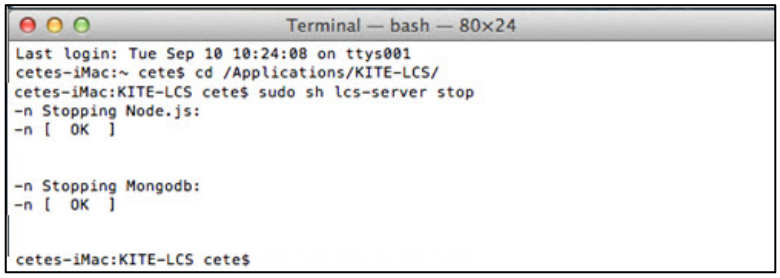
Shutting Down a Macintosh LCS

To shut down the LCS, perform the following steps.

1. Go to the LCS computer.
2. Click on the Terminal window that has remained open.
3. Type sudo sh lcs-server stop


Terminal — bash — 80×24
Last login: Tue Sep 10 10:24:08 on ttys001
cetes-iMac:~ cete$ cd /Applications/KITE-LCS/
cetes-iMac:KITE-LCS cete$ sudo sh lcs-server stop

4. Press Enter.

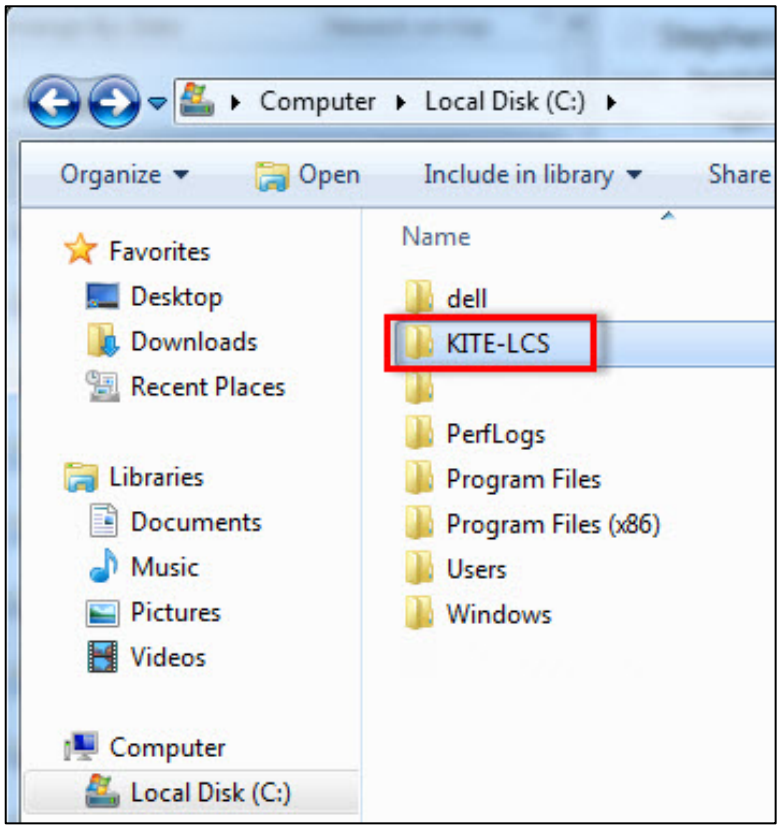

Terminal — bash — 80×24
Last login: Tue Sep 10 10:24:08 on ttys001
cetes-iMac:~ cete$ cd /Applications/KITE-LCS/
cetes-iMac:KITE-LCS cete$ sudo sh lcs-server stop
-n Stopping Node.js:
-n [OK]
-n Stopping Mongodb:
-n [OK]
cetes-iMac:KITE-LCS cete$

The LCS server will shut down (deactivate), and no one will have access until it is restarted.

Shutting Down a Windows LCS

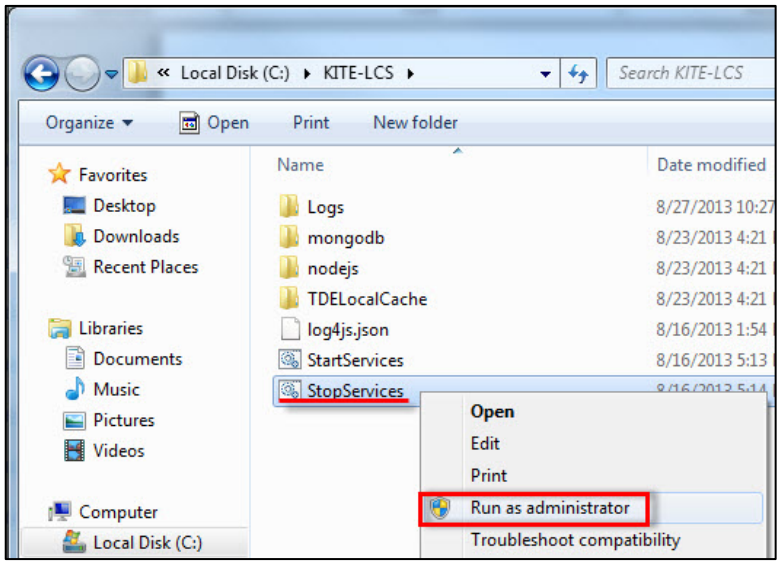
To shut down the LCS, perform the following steps.

1. Close the blank black command box on the LCS machine.
2. Open the KITE-LCS folder you downloaded when setting up the server.



3. Right click StopServices.

4. Click Run as administrator.



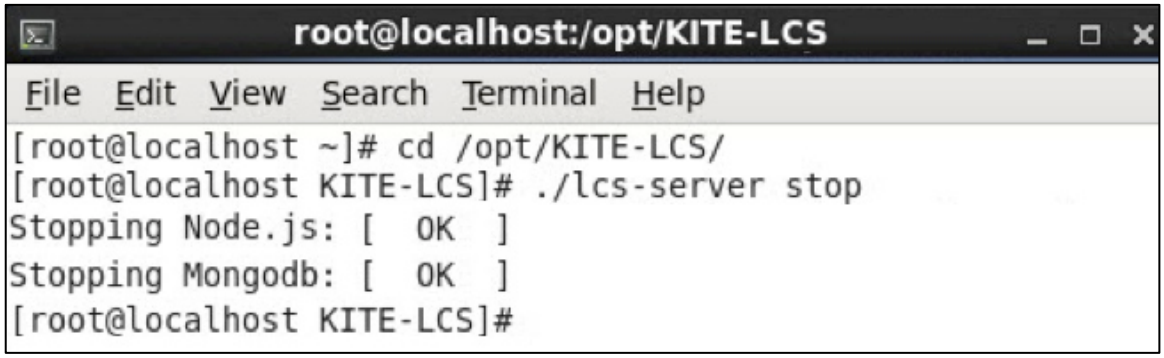
5. When the black command box appears asking you to "Press any key to continue," press Enter.

The LCS server will shut down (deactivate), and no one will have access until it is restarted.

Shutting Down a Linux LCS

To shut down the LCS, perform the following steps.

1. Open the Terminal as a root or sudo user.
2. Go to the KITE-LCS directory using cd /opt/KITE-LCS
3. Stop the server using the following command: ./lcs-server stop

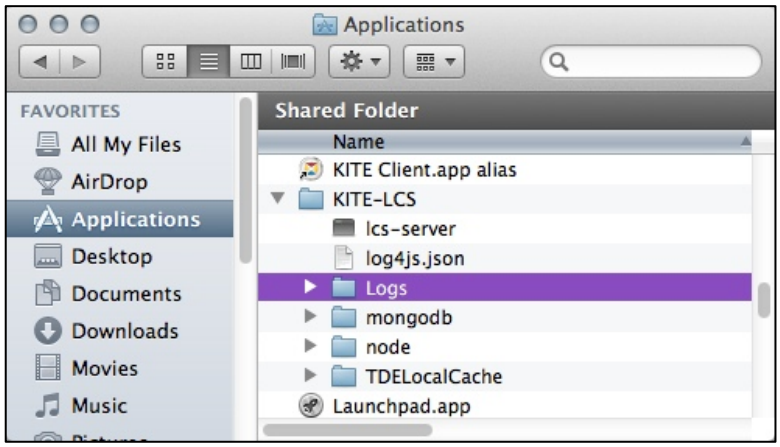


The LCS will shut down (deactivate), and no one will have access until it is restarted.

Sending Log Files to the Help Desk

If you are unable to set up the LCS, you can send program log files via email to the KITE Help Desk. The log files are important because they provide us with insight as to why the LCS does not run. To locate and send the LCS log files, perform the following steps.

1. Open the KITE-LCS folder.
2. Open the Logs folder.



3. Locate the log file.

> Hint: Look for tdelcs.log or tdelcs.txt.

Note: This file can be large. If it is large, compress or zip the file before sending it to the Help Desk.

---

4. Create a new email message using the information in the table below.

Email	Notes
Email Address	kite-support@ku.edu
Subject	TDE-LCS Log File
Body	Type a brief description of the problem(s) you are encountering.
Attachment(s)	tdelcs.log or tdelcs.txt

5. Send the email.

Viewing System Properties

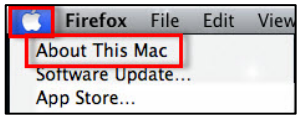
This section of the manual discusses how to find system properties on both a Macintosh and a Windows machine. Because of the large number of configurations of Linux machines, we do not cover finding the system properties on that platform.

Note: Viewing system properties is a platform-specific procedure. Be sure you are following the procedure for your machine.

Viewing Macintosh System Properties

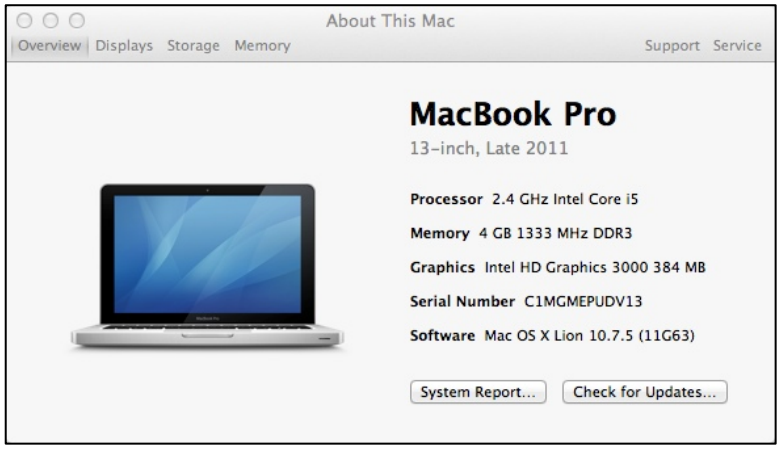
If you do not know whether your system meets the minimum requirements for a KITE Local Caching Server, you can check your system's properties. To view your system properties, perform the following steps.

1. On the upper left side of your screen, click the Apple symbol.
2. Click About This Mac.

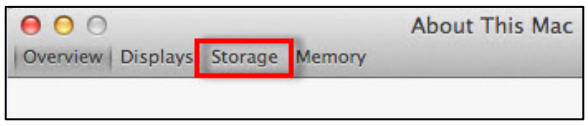


3. Verify that your computer is running OS X Version 10.6 or higher.
4. Verify that your computer processor is 1.0 GHz or higher.
5. Verify that your memory (RAM) is 2 GB or more.

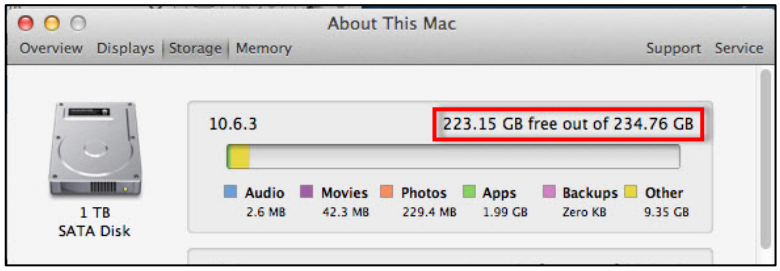
6. Click the More Info button.
   The detailed About This Mac window appears.


About This Mac
Overview Displays Storage Memory
Support Service
MacBook Pro
13-inch, Late 2011
Processor 2.4 GHz Intel Core i5
Memory 4 GB 1333 MHz DDR3
Graphics Intel HD Graphics 3000 384 MB
Serial Number C1MGMEPUDV13
Software Mac OS X Lion 10.7.5 (11G63)
System Report...
Check for Updates...

7. Click Storage.



8. Verify that your hard drive (SATA Disk or SSD) has at least 3 GB free.

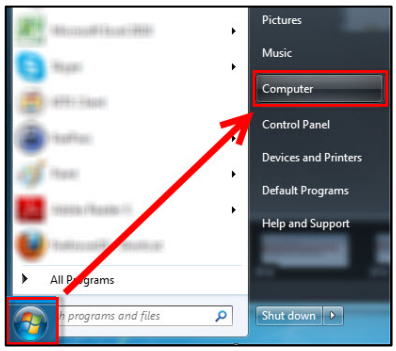


Note: If your system does not meet these requirements, find another computer to install the LCS.

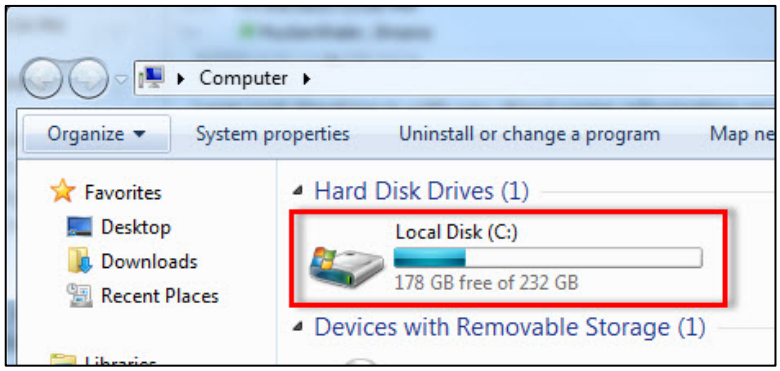
Viewing Windows System Properties

If you do not know whether your system meets the minimum requirements for a KITE Local Caching Server, you can check your system properties. To view your system properties, perform the following steps.

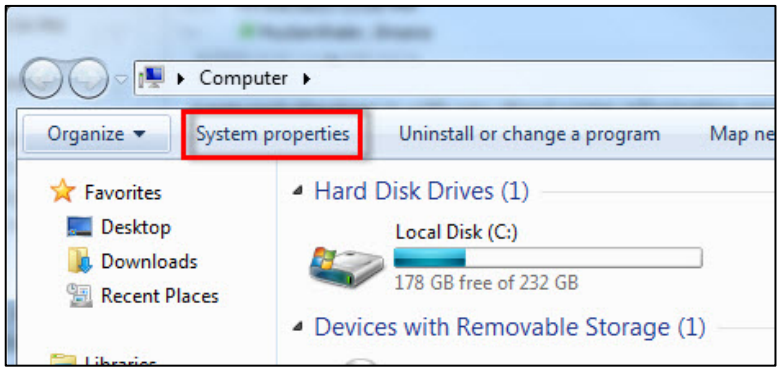
1. From the Start Menu, click Computer.



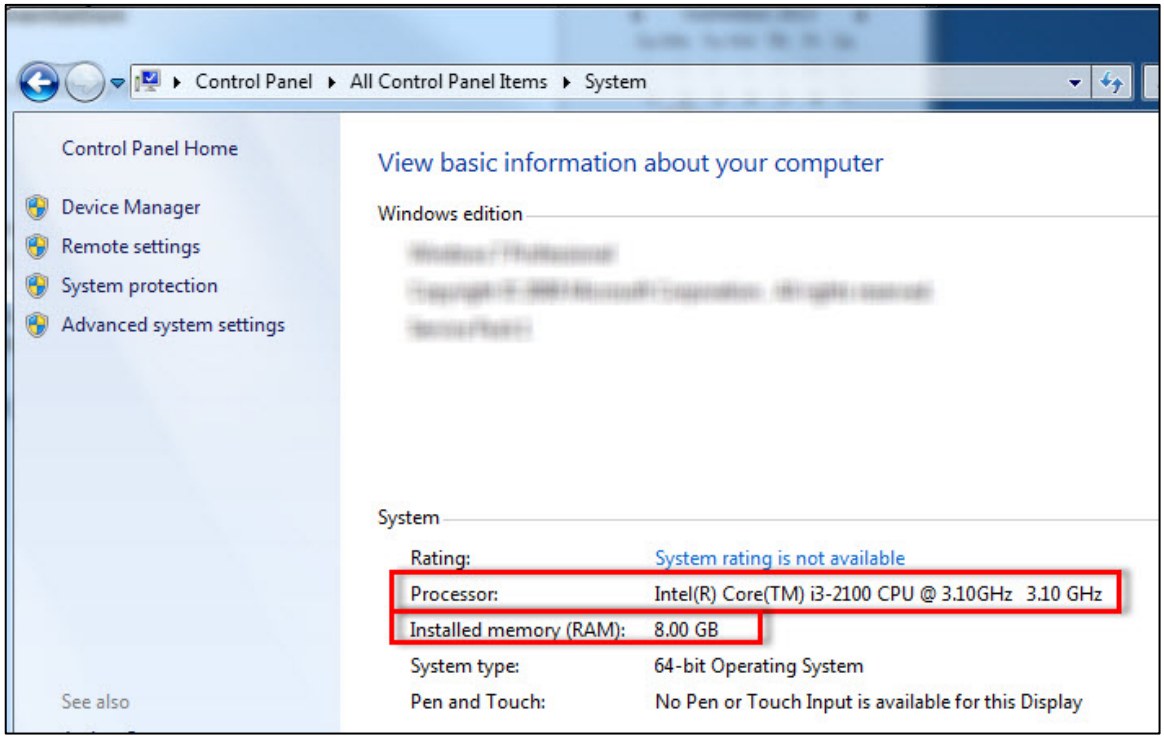
2. Verify that your hard drive has at least 3 GB free.



3. Click System properties.



4. Verify that your computer has at least a 2 GHz processor.
5. Verify that your computer has at least 4 GB of memory (RAM).



Note: If your system does not meet the minimum requirements, find another computer in order to install the LCS.